

Service Manual

DEH-59/UC



ORDER NO.
CRT1809

HIGH POWER CD PLAYER WITH FM/AM TUNER

DEH-59	UC
DEH-52	UC
DEH-525	UC
DEH-49	UC
DEH-42	UC
DEH-425	UC
DEH-225	UC
DEH-523	ES
DEH-323	ES
DEH-223	ES

COMPACT
DISC
DIGITAL AUDIO

- See the service manual CX-597(CRT1811) for the CD mechanism description, disassembly and circuit description.
- The CD mechanism employed in this model is one of CX-597 series.

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● CD Player Service Precautions

1. For pickup unit(CGY1070) handling, please refer to "Disassembly"(CX-597 Service Manual CRT1811). During replacement, handling precautions shall be taken to prevent an electrostatic discharge(protection by a short pin).
2. During disassembly, be sure to turn the power off since an internal IC might be destroyed when a connector is plugged or unplugged.

1. SAFETY INFORMATION

CAUTION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely; you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5). When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

2. SPECIFICATIONS

General

Power source	14.4 V DC (10.8 — 15.1 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Dimensions	
(DIN) (chassis)	178 (W) × 50 (H) × 150 (D) mm [7 (W) × 2 (H) × 5-7/8 (D) in.]
(nose)	188 (W) × 58 (H) × 22 (D) mm [7-3/8 (W) × 2-1/4 (H) × 7/8 (D) in.]
(D)	178 (W) × 50 (H) × 155 (D) mm [7 (W) × 2 (H) × 6-1/8 (D) in.]
(nose)	170 (W) × 48 (H) × 17 (D) mm [6-3/4 (W) × 1-7/8 (H) × 5/8 (D) in.]
Weight	1.5 kg (3.3 lbs)

Amplifier

Continuous power output	15 W per channel min. into 4 ohms, both channels driven 50 to 15,000 Hz with no more than 5% THD.
Maximum power output	35 W × 4
Load impedance	4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance	500 mV/ 1 kΩ
Tone controls	
(Bass)	±12 dB (100 Hz)
(Treble)	±12 dB (10 kHz)
Loudness contour	+10 dB (100 Hz), +7 dB (10 kHz) (volume: -30 dB)

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format	Sampling frequency: 44.1 kHz Number of quantization bits: 16; linear
Frequency characteristics	5 — 20,000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz)(IHF-A network)
Dynamic range	90 dB (1 kHz)
Number of channels	2 (stereo)

FM tuner

Frequency range (UC)	87.9 — 107.9 MHz
Frequency range (ES)	87.5 — 108 MHz
Usable sensitivity	11 dBf (1.0 V/75Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	16 dBf (1.7 V/75Ω, mono)
Signal-to-noise ratio	70 dB (IHF-A network)
Distortion	0.3% (at 65 dBf, 1 kHz, stereo)
Frequency response	30 — 15,000 Hz (3 dB)
Stereo separation	40 dB (at 65 dBf, 1 kHz)
Selectivity	70 dB (2ACA)
Three-signal intermodulation (desire signal level)	50 dBf (two undesire signal level: 110 dBf)

AM tuner

Frequency range (UC, ES)	530 — 1,710 kHz
Frequency range (ES)	531 — 1,602 kHz
Usable sensitivity	18 V (25 dB) (S/N: 20 dB)
Selectivity	50 dB (10 kHz)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

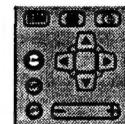
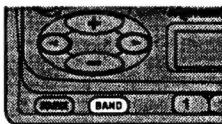
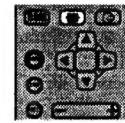
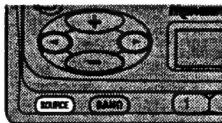
3. OPERATION AND CONNECTION

Tuner Operation

Tuner Source and Band

- Push the **SOURCE** button or the **Tuner** button to select Tuner.
The Frequency appears on the display.
("○" indicator lights when stereo station selected.)

- Use the **BAND** button to select the desired band.
(**FM1**, **FM2**, **FM3**, **AM**)



Manual and Seek Tuning

Both Manual (step-by-step) and Seek (automatic) tuning are available.

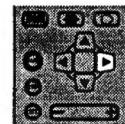
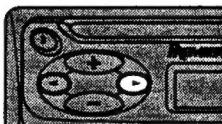
1. Press the **MANU** button to switch alternately between the Manual and Seek tuning modes.

The "MANU" indicator lights when Manual tuning is selected and turns OFF when Seek tuning is selected.

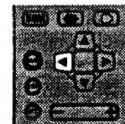
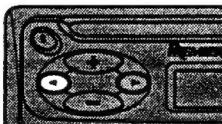


2. Press the (►) button to tune the receiver to a higher frequency.

MANU ON (Manual tuning):
The frequency changes step by step.
MANU OFF (Seek Tuning):
The tuner automatically seeks out and receives broadcasting stations.



- Press the (◀) button to tune the receiver to a lower frequency.

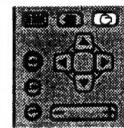
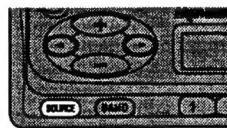
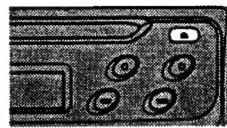
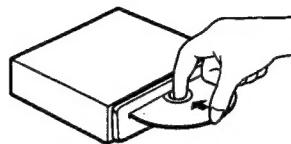


Using the Built-in CD Player

The built-in CD player plays one standard 12 cm or 8 cm (single) CD at a time. Do not use an adapter when playing 8 cm CD.

Inserting and Removing Discs

- Insert the disc with the recorded (iridescent) surface down. CD playback begins immediately, whether or not the player is ON or the built-in CD source selected. The track number and playing time are displayed.
- Press the **Eject** button to eject any disc loaded in the disc slot.

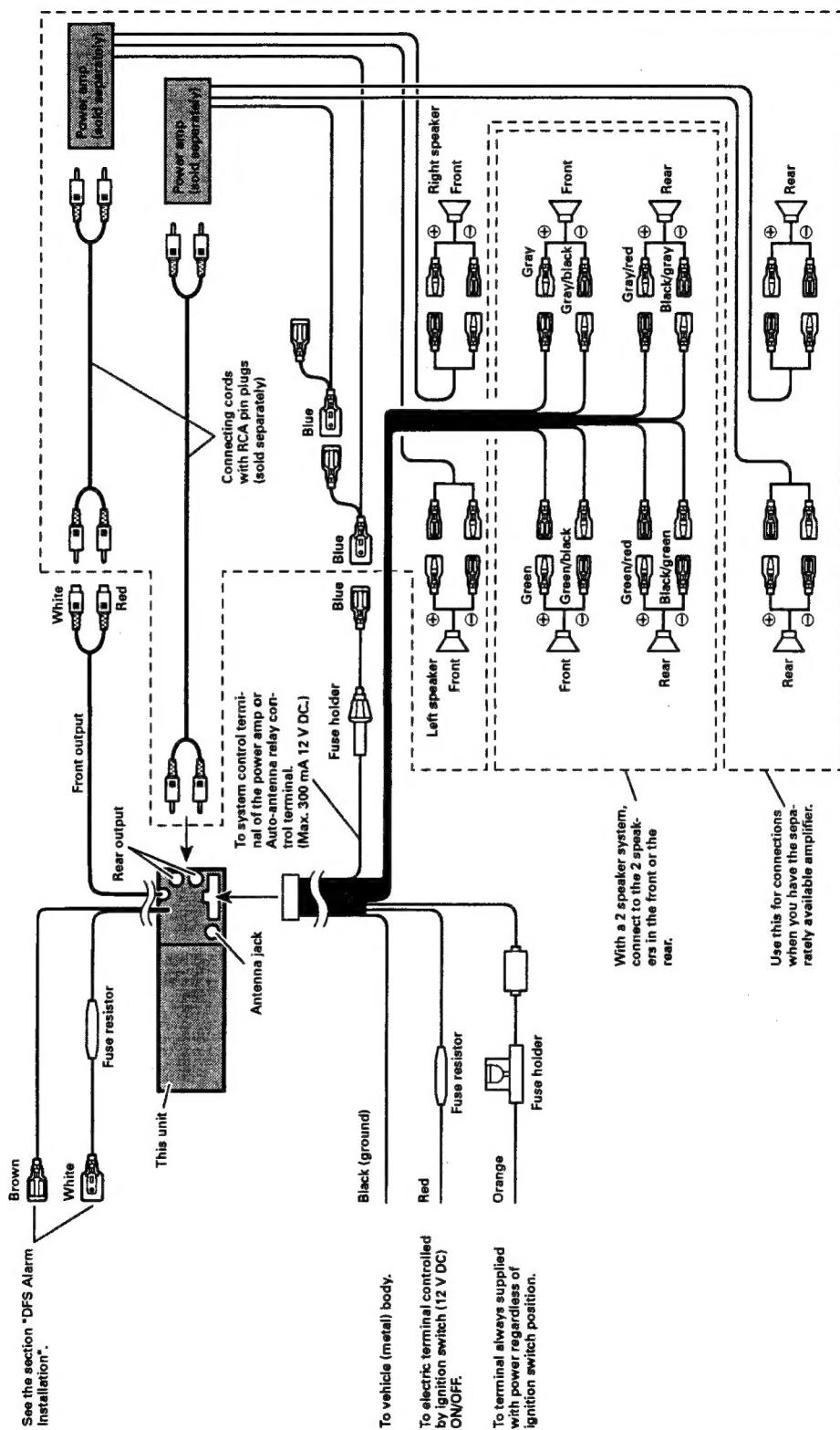


Playing the Built-in CD player

- To play a CD that is already loaded, press the **SOURCE** or **CD** button with a CD loaded to select the built-in CD player.

The built-in CD player is selected only when a CD is loaded.

● **Connection Diagram**



4. DISASSEMBLY

● Removing the Case(Not shown)

1. Remove the two screws.
2. Insert and turn a flat screwdriver at locations indicated by arrows to remove the case.

● Removing the Detach Grille Assy(Fig.1)

(Except for DEH-225/UC and DEH-223/ES)

1. Press the detach button, and then pull detach grille assy.

● Removing the Panel Assy(Fig.1)

(Except for DEH-225/UC and DEH-223/ES)

1. Disconnect the two stoppers indicated by arrows, and then remove the panel assy.

● Removing the CD Mechanism Module(Fig.1,2)

1. Remove the four screws.
2. Disconnect the connector.
3. Remove the CD mechanism module.

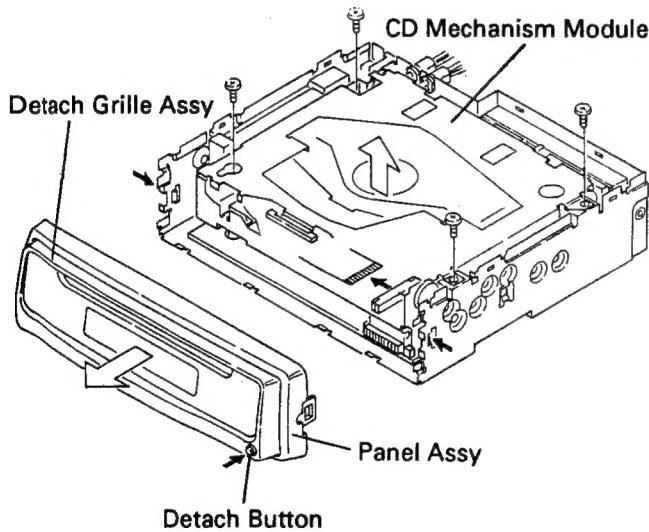


Fig.1

● Removing the Grille Assy(Fig.2)

(DEH-225/UC and DEH-223/ES)

1. Disconnect the connector.
2. Disconnect the two stoppers indicated by arrows, and then remove the grille assy.

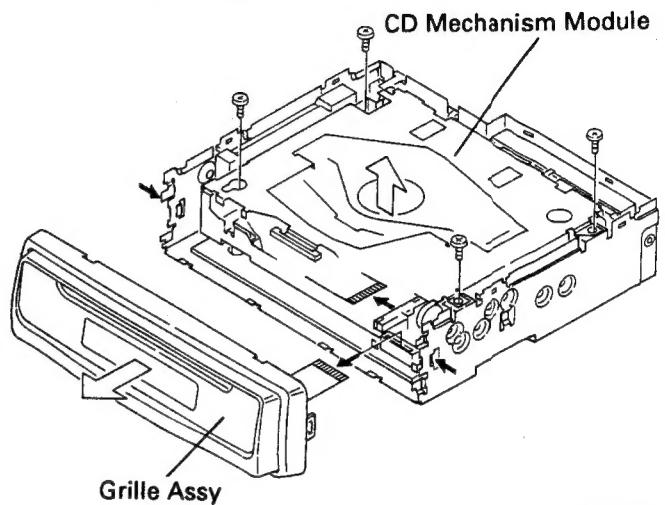


Fig. 2

● Removing the Chassis Unit(Fig.3)

1. Remove the screw A, two screws B, screw C and two screws D.
2. Stretch the claw.
3. Remove the two cords, and then remove the chassis Unit.

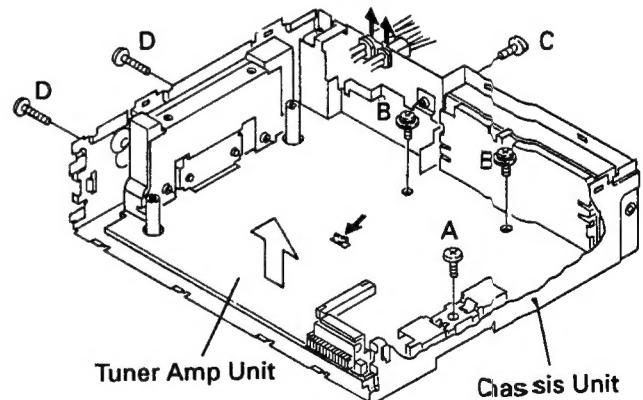


Fig. 3

5. ADJUSTMENT

● Connection Diagram

NOTE:-

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of SSG.

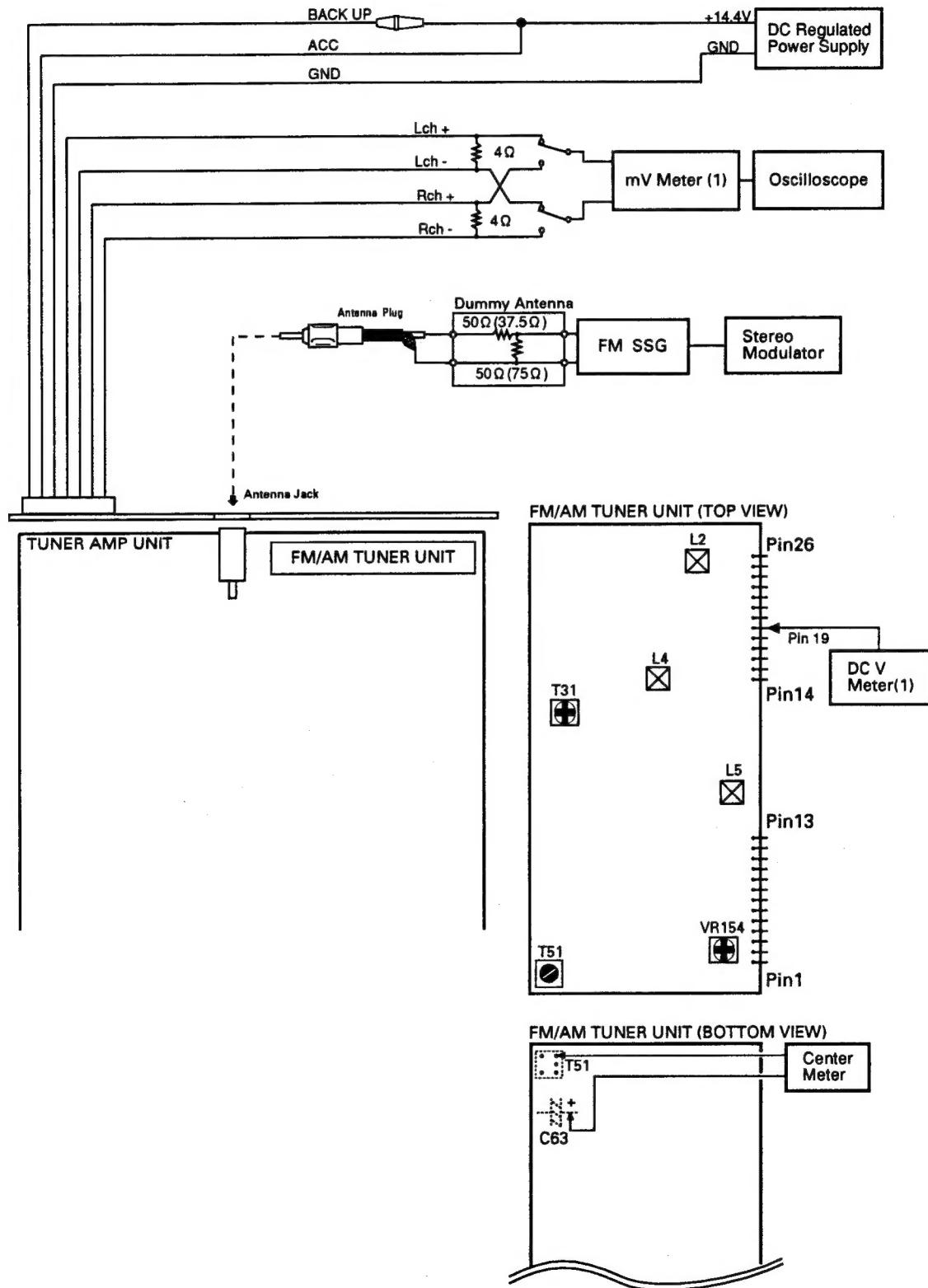


Fig. 4

FM ADJUSTMENT(UC MODEL)

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.)

S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	.....	.....	107.9	L5	DC V Meter(1) : 6V
IF	1	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	1	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RFCoil	1	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	1	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	1	98.1 S	39	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

FM ADJUSTMENT(ES MODEL)

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	.....	.....	108.0	L5	DC V Meter(1) : 6V
IF	1	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	1	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RFCoil	1	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
IFT	1	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	1	98.1 S	39	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

6. TEST MODE

6.1 TEST MODE

1)Precautions

• This unit uses a single power supply (+5V) for the regulator. The signal reference potential, therefore, is connected to REFO(approx. 2.5V) instead of GND.

If REFO and GND are connected to each other by mistake during adjustments, not only will it be impossible to measure the potential correctly, but the servo will malfunction and a severe shock will be applied to the pick-up. To avoid this, take special note of the following.

Do not connect the negative probe of the measuring equipment to REFO and GND together. It is especially important not to connect the channel 1 negative probe of the oscilloscope to REFO with the channel 2 negative probe connected to GND.

Since the frame of the measuring instrument is usually at the same potential as the negative probe, change the frame of the measuring instrument to floating status.

If by accident REFO comes in contact with GND, immediately switch the regulator or power OFF.

• Always make sure the regulator is OFF when connecting and disconnecting the various filters and wiring required for measurements.

• Before proceeding to further adjustments and measurements after switching regulator ON, let the player run for about one minute to allow the circuits to stabilize.

• Since the protective systems in the unit's software are rendered inoperative in test mode, be very careful to avoid mechanical and /or electrical shocks to the system when making adjustment.

• Test mode starting procedure
Switch ACC, back-up ON while pressing the 4 and 6 keys together.

• Test mode cancellation
Switch ACC, back-up OFF.

• Disc detection during loading and eject operations is performed by means of a photo transistor in this unit. Consequently, if the inside of the unit is exposed to a strong light source when the outer casing is removed for repairs or adjustment, the following malfunctions may occur.

*During PLAY, even if the eject button is pressed, the disc will not be ejected and the unit will remain in the PLAY mode.

*The unit will not load a disc.

When the unit malfunctions this way, either re-position the light source, move the unit or cover the photo transistor.

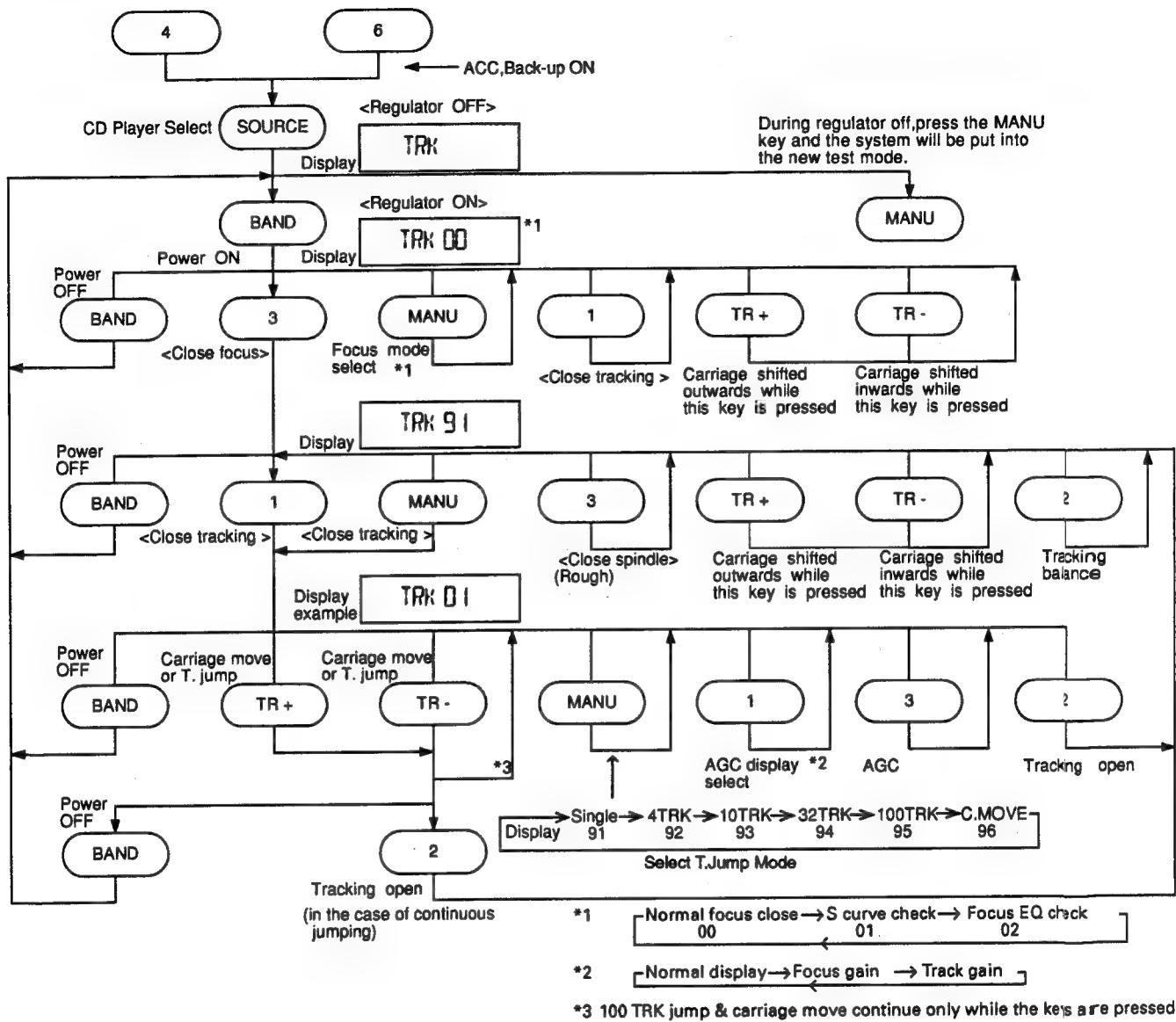
• When loading and unloading discs during adjustment procedures, always wait for the disc to be properly clamped or ejected before pressing another key. Otherwise, there is a risk of the actuator being destroyed.

• Turn power off when pressing the button TR+ or the button TR- key for focus search in the test mode. (Or else lens may stick and the actuator may be damaged.)

• SINGLE/4TRK/10TRK/32TRK will continue to operate even after the key is released. Tracking is closed the moment C-MOVE is released.

• JUMP MODE resets to SINGLE as soon as power is switched off.

● Flow Chart



6.2 ERROR NUMBERS AND NEW TEST MODE

● Error Number Indication

If the CD should fail to operate or if an error has taken place during operation the player will enter into the error mode, and the cause of the error will be numerically indicated.

This is aimed at assisting in analysis or repair.

(1) Basic Means of Display

- With ERROR indicated in "MODE" on IP-BUS Display data, an error code is transmitted by the use of MIN and SEC. The MIN and SEC data will be identical.
- Examples of Display ER-XX

(2) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Carriage doesn't move to or from the innermost position → Home switch failed and/or carriage immobile
11	ELECTRIC	Focus failure	Focus failed → Defects, disc upside-down, severe vibration
12	ELECTRIC	SETUP failure Subcode failure	Spindle failed to lock or subcode unreadable → Spindle defective, defect, severe vibration
14	ELECTRIC	Mirror failure	Unrecorded CD-R The disc is upside-down, defects, vibration
17	ELECTRIC	Set up failure	AGC protect failed → Defects, disc upside-down, severe vibration
30	ELECTRIC	Search time out	Failed to reach target address → Carriage/tracking defective and/or defects
A0	SYSTEM	Power failure	Power overvoltage or short circuit detected → Switching transistor defective and/or power abnormal

"defects" means scratches, dirt etc on the surface of the disc.

● New Test Mode(aging operation and setup analysis)

The single CD player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disc number).

During the setup, the CD software operation status (internal RAM and C-point) is displayed.

(1) How to enter NEW TEST Mode

See the test mode flow chart Page 11.

(2) Relations of keys between TEST and NEW TEST Modes

Keys	Test Mode		New Test Mode	
	Regulator OFF	Regulator ON	PLAY in progress	Error Occurred, Protection Activated
BAND	Regulator ON	Regulator OFF	—	Time of occurrence / cause of error select
TR+	—	FWD-KICK	TRACK+ / FF	—
TR-	—	REV-KICK	TRACK- / REV	—
1	—	TRACKING CLOSE	SCAN	—
2	—	TRACKING OPEN	REPEAT	—
3	—	FOCUS CLOSE	RANDOM	—
MANU	To New Test Mode Select	FOCUS MODE	AUTO/MANU	TRACK No./ time of occurrence select

Operations, such as EJECT, CD ON/OFF, etc. are performed normally.

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause	Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus	Scratch, Stain, Vibration, Servo defect, etc...
41	ELECTRIC	PLAY	LOCK=L 100ms	Spindle unlock	
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Failed to read subcode	
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated	

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving inwards	10-second time out, Home switch failed
03	Carriage moving outwards	10-second time out, Home switch failed
05	Carriage moving outwards	None
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closure (XSI=L)	Failure to close focus
10,14	Waiting for focus closure (FOK=H)	Failure to close focus
15, 16, 17	Focus closed, Tracking open	Focus disrupted
18	During focus AGC Subcode waiting	Focus disrupted
19	During tracking AGC	Disrupted focus
20	Waiting for MIRR, LOCK or subcode read Carriage closed, SPINDLE=ADAPTIVE	Focus disrupted, MIRR NG, Failure to lock, Failed to read subcode

(5) Example of Display.

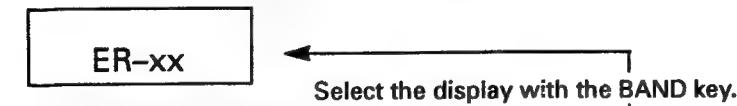
· SET UP in progress

Auto	Manual
TNo. 11	Min Sec 11 11

· Operation (PLAY, SEARCH, etc.) in progress perfectly identical with that in the normal mode.

· Protection/Error upon occurrence

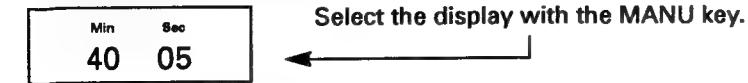
(a) Error number indicated



(b) Track number indicated

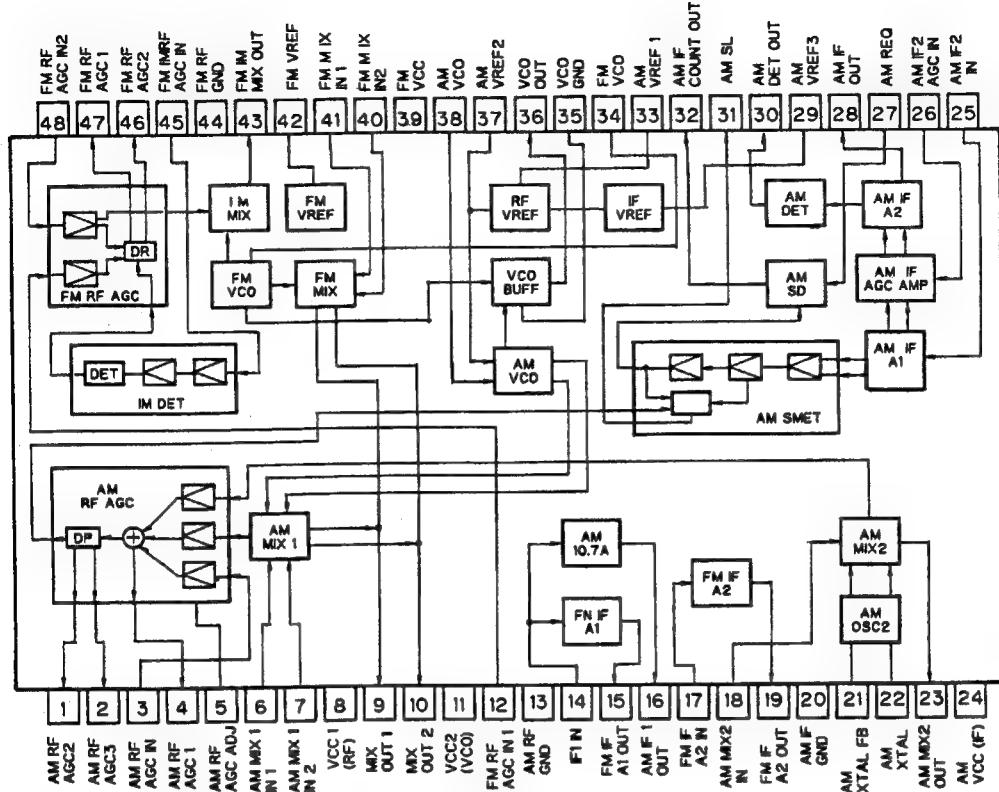


(c) Absolute time indicated

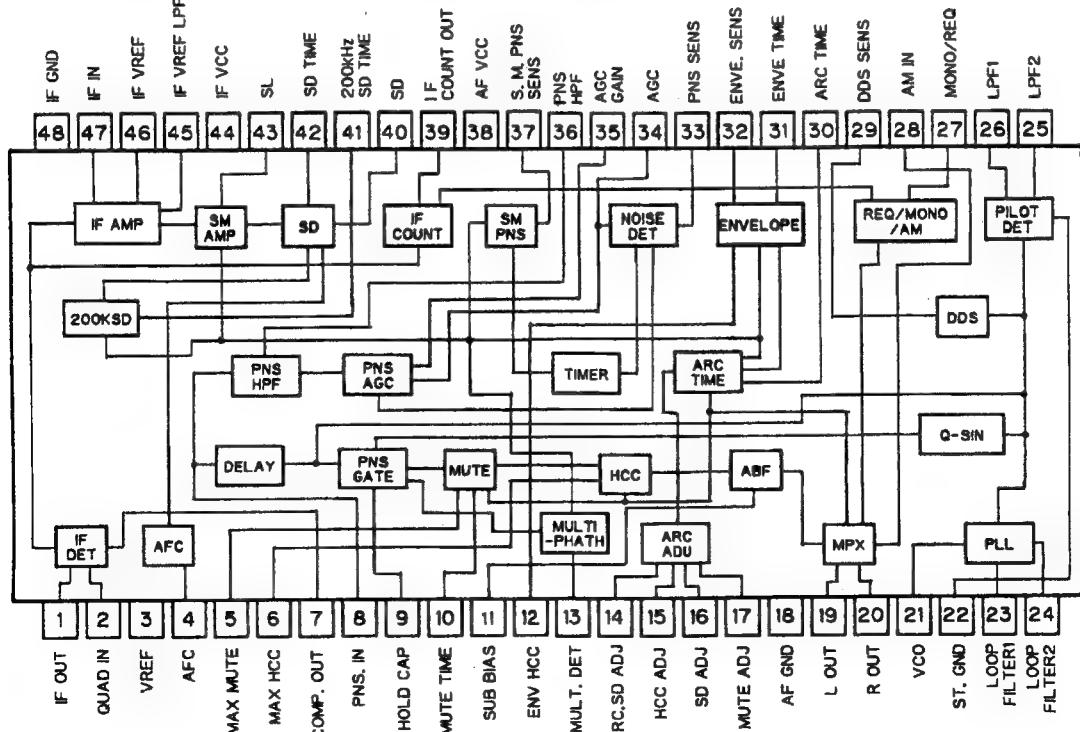


7. IC INFORMATION

PA4023A



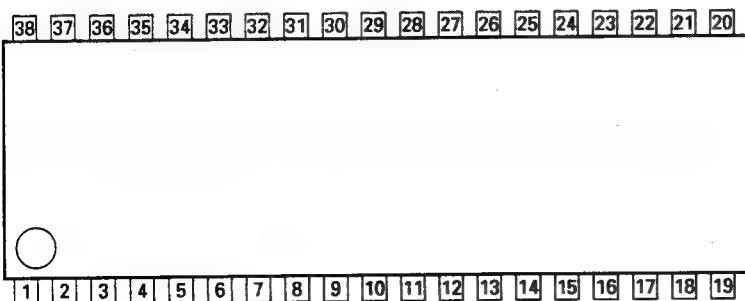
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● Pin Functions (UPC2572GS)

Pin No.	Pin Name	I/O	Function and Operation
1	EFM-IN	I	EFM comparator input
2	AGC-OUT	O	AGC amplifier output
3	C. AGC		Connects AGC peak detection condenser
4	RF-IN	I	RF signal DC component cut input
5	RF-OUT	O	RF amplifier output
6	RF-	I	RF amplifier inverted input
7	C1, 3T		Connects RF3T component detection condenser
8	C2, 3T		Connects RF3T component detection condenser
9	Vcc		Power supply
10	A	I	A signal input
11	C	I	C signal input
12	B	I	B signal input
13	D	I	D signal input
14	F	I	F signal input
15	E	I	E signal input
16	PD	I	APC amplifier input
17	LD	O	APC amplifier output
18	LDON	I	Laser diode ON/OFF input
19	VREF-OUT	O	Reference voltage output
20	VREF-IN	I	Reference voltage input
21	DET-OUT	O	Vibration detection circuit output
22	DET-IN	I	Vibration detection circuit input
23	TE-OUT2	O	Tracking error amplifier output (fourfold gain)
24	TE-OUT1	O	Tracking error amplifier output (singlefold gain)
25	TE-	I	Tracking error amplifier inverted input
26	GND		GND
27	FE-	I	Focus error amplifier inverted input
28	FE-OUT	O	Focus error amplifier output
29	C.FE	I	Focus error signal DC component cut input
30	3T-OUT	O	RF3T component output
31	MIRR	O	MIRR signal output
32	RFOK	O	RFOK signal output
33	DEFECT	O	DEFECT signal output
34	C. DEF		Connects DEFECT signal detection condenser
35	EFM-OUT	O	EFM comparator output
36	ASY	I	EFM comparator level input
37	TE-BAL	I	Tracking balance control
38	FE-BAL	I	Focus balance control

UPC2572GS

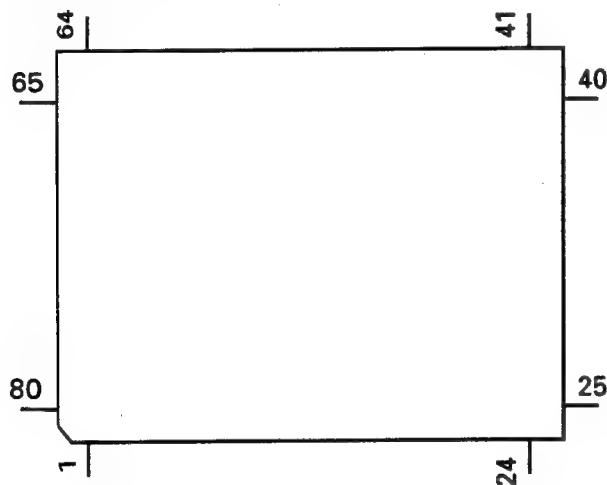


● Pin Functions (UPD63702GF)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Supplies current of positive voltage to the logic circuits
2	RST	I	System reset input pin
3	AO	I	Microcomputer interface AO="L": STB active and set to address register AO="H": STB active and set to parameter
4	STB	I	Signal to latch serial data within the LSI
5	SCK	I	Clock input pin to input and output serial data
6	SO	O	Outputs serial data and status signal
7	SI	I	Serial data input pin
8	D.GND		Logic circuit GND
9	X.GND		Crystal oscillation circuit GND
10	XTAL	I	Crystal oscillator connection pin
11	XTAL	O	Crystal oscillator connection pin
12	X.VDD		Supplies current of positive voltage to the crystal oscillation circuit
13	DA.VDD		Supplies current of positive voltage to the D/A converter
14	R+	O	Right channel analog audio data output pin
15	R-	O	Right channel analog audio data output pin
16,17	DA.GND		D/A converter GND
18	L-	O	Left channel analog audio data output pin
19	L+	O	Left channel analog audio data output pin
20	DA.VDD		Supplies current of positive voltage to the D/A converter
21	D.VDD		Supplies current of positive voltage to logic circuit
22	FLAG	O	Flag output pin to indicate that audio data currently being output consists of noncorrectable data
23	WDCK	O	Pin to output double the frequency of LRCK
24	C16M	O	Pin to output the clock
25	EMPH	O	Output pin for the pre-emphasis data in the sub-Q code
26	DIN	I	Input pin for serial audio data
27	DOUT	O	Output pin for the serial audio data
28	SCKO	O	Output pin for the clock for the serial audio data
29	LRCK	O	Signals to distinguish the right and left channels of the audio data output from DOUT. Frequency is 44.1kHz at 50% duty at normal regeneration
30	TX	O	Output pin for the digital audio interface data
31	CTLV	I	Oscillation control pin for high-frequency clock generation VCO used for the digital PLL upon regeneration at fast speed of 2- or 4-fold
32	POUT	O	Output point for phase comparison
33	D.GND		GND for the logic circuit
34	VCO	I	Input pin for the inverter
35	VCO	O	Output pin for the inverter
36	D.VDD		Supplies current of positive voltage to the logic circuit
37	PLCK	O	Pin for monitoring the bit clock
38	LOCK	O	Indicates "H" when the synchronized pattern detection signal matches the frame counter output at the EFM recovery modulation, and "L" when they don't match
39	WFCK	O	Minute-cycle signal for the bit clock, the signal indicates the cycle of 1 frame (approx. 7.35kHz)
40	RFCK	O	Minute-cycle signal for the clock, the signal indicates cycle of 1 frame (approx. 7.35kHz)
41	D.GND		GND for the logic circuit
42,43	TEST0,1	I	Test pins
44,45	TM2,TM4	I	Pins for controlling regeneration at fast speed of 2- or 4-fold
46-49	T4-T7	I	Test pins
50,51	C1D1,C1D2	O	Output pin for indicating the C1 error correction results
52-54	C2D1-C2D3	O	Output pin for indicating the C2 error correction results
55	D.VDD		Supplies current of positive voltage to the logic circuit
56	SFSY	O	Outputs 1 word of the subcode. Generally, 1 cycle is approx 136 micro seconds
57	SBSY	O	The signal indicates the beginning of the subcode block. The SFSY signal is output at high level every 98 times
58	SBSO	O	Output pin for the subcode data

Pin No.	Pin Name	I/O	Function and Operation
59	SBCK	I	Input pin for the clock signal for read-out of the subcode data
60	A.GND		GND for the analog circuit
61	MD	O	Output pin for the spindle drive
62	SD	O	Output pin for the sled drive
63	TD	O	Output pin for the tracking drive
64	FD	O	Output pin for the focus drive
65	FBAL	O	Output pin for the focus balance control
66	TBAL	O	Output pin for the tracking balance control
67	A.VDD		Supplies current of positive voltage to the analog circuit
68	TBC	I	Switches coefficient banks for the tracking filter
69	EFM	I	Input pin for the EFM signal
70	HOLD	I	Input pin for the hold control signal
71	RFOK	I	Input pin for the RFOK signal
72	MIRR	I	Input pin for the MIRR signal
73	A.GND		GND for the analog circuit
74,75	VR2,1	I	The signal input through these pins is digitized to 8-bit by the A/D converter, which by operation of the assigned register, can be read into the microcomputer
76	FE	I	Inputs a focus-error signal from the RF amplifier
77	TE	I	Inputs a tracking-error signal from the RF amplifier
78	TEC	I	Input pin for the tracking comparator
79	REFOUT	O	Output point for midpoint potential for the A/D converter for the LSI portion
80	A.VDD		Supplies current of accurate voltage to the analog circuit

*UPD63702GF



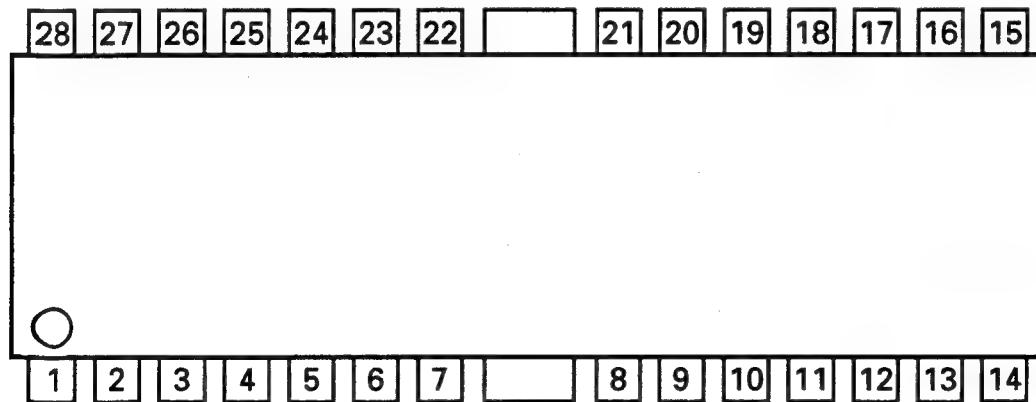
IC's marked by* are MOS type.

Be careful in handling them because they are very liable to be damaged by electrostatic induction.

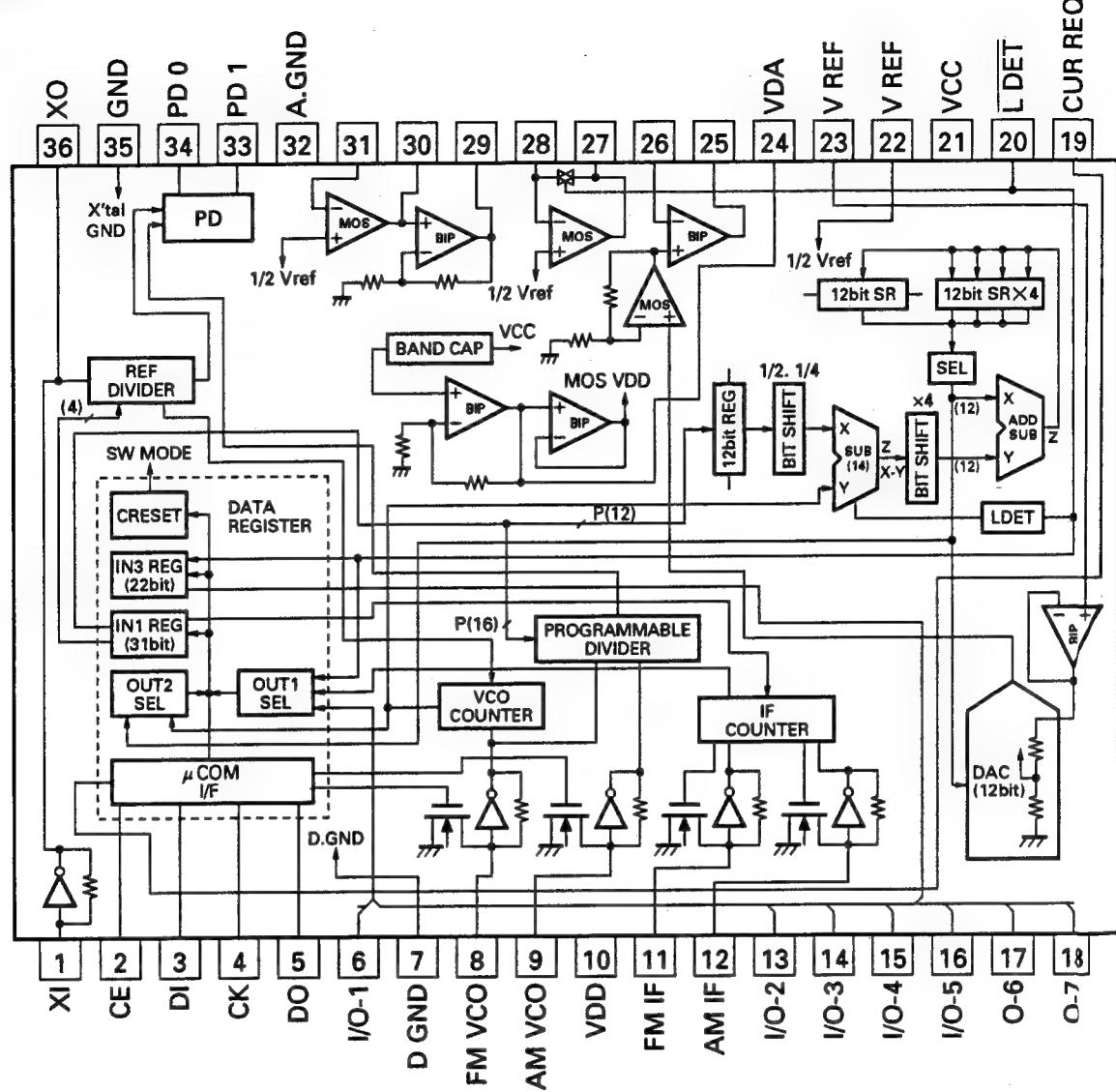
● Pin Functions (XLA6997FP)

Pin No.	Pin Name	I/O	Function and Operation
1	OUT1-A	O	CH1 driver output
2	OUT1-B	O	CH1 driver output
3	IN1	I	CH1 input
4	IN1'	I	CH1 gain adjustment input
5	REG-B		PowTr base connection pin for regulator
6	REG OUT	O	Regulator output PowTr collector connection
7	REG GND		Regulator GND/Common circuit GND
8	BIAS	I	BIAS input
9	MUTE		Mute control pin
10	REG SW		Regulator switch pin
11	TEMP MON		Humidity monitor pin
12	IN2	I	CH2 input
13	OUT2-B	O	CH2 driver output
14	OUT2-A	O	CH2 driver output
15	GND		GND
16	OUT3-A	O	CH3 driver output
17	OUT3-B	O	CH3 driver output
18	IN3"		CH3 gain adjustment pin
19	IN3'		CH3 gain adjustment pin
20	IN3	I	CH3 input
21,22	VCC		VCC
23	IN4	I	CH4 input
24	IN4'		CH4 gain adjustment pin
25	IN4"		CH4 gain adjustment pin
26	OUT4-B	O	CH4 driver output
27	OUT4-A	O	CH4 driver output
28	GND		GND

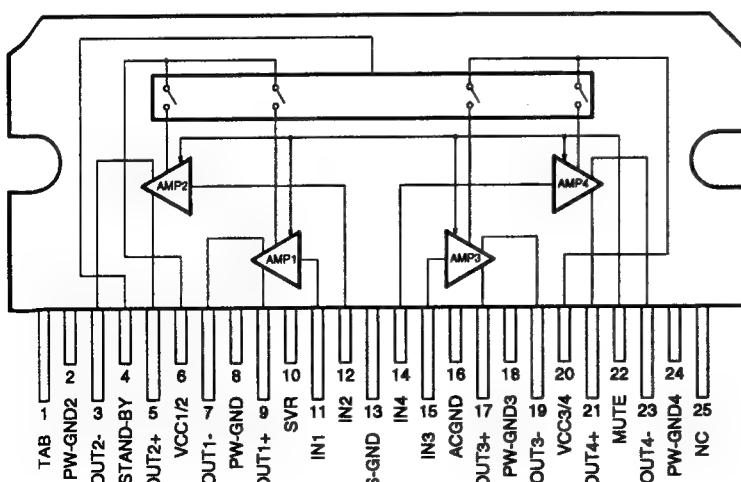
XLA6997FP



*PM2004A



PAL003A

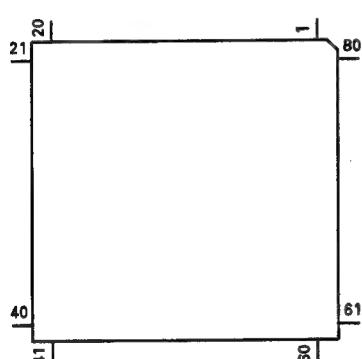


● Pin Functions (PDR027A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	MODEL1	I		Model select input
2,3	NC			Not used
4	AVSS			GND
5	ST	I		FM stereo input
6	SD	I		SD input
7	AVREF1			A/D converter reference voltage
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	NC			Not used
11	PDI	I		Data input from PLL IC
12	PDO	O	C	Data output for PLL IC
13	PCK	O	C	Serial clock output for PLL IC
14	PCE	O	C	Chip enable output for PLL IC
15	CURRO	O	C	Tuner voltage FIX output
16	XSI	I		Data input from CD mechanism module LSI
17	XSO	O	C	Data output for CD mechanism module LSI
18	XSCK	O	C	Clock output for CD mechanism module LSI
19	NC			Not used
20	AM	O	C	AM power control output
21	FM	O	C	FM power control output
22	VDCONT	O	C	VD control output
23	CONT	O	C	Servo driver power supply control
24	XAO	O	C	Command/Data output for CD mechanism module LSI
25	XRST	O	C	Reset output for CD mechanism module LSI
26	XSTB	O	C	Strobe output for CD mechanism module LSI
27	CLAMP	I		Disc clamp sense input
28	MIRR	I		Mirror detector input
29	FOK	I		Focus OK signal input
30	LOCK	I		Spindle lock detector input
31	CDLOAD	O	C	Load motor loading control output
32	NC			Not used
33	VSS			GND
34	CDEJET	O	C	Load motor eject control output
35	CD5VON	O	C	CD +5V power supply control output
36	DLED	O	N	Alarm LED output
37,38	MODEL2,3	I		Model select input
39,40	NC			Not used
41	SWVDD	O	C	Grille power supply control output
42	SYSPW	O	C	System power supply control output
43	ILMPW	O	C	Illumination power supply control output
44	MUTE	O	C	System mute output
45	PEE	O	C	Beep tone output
46	DOORH	O	C	Door system select output
47	DRSENS	I		Door open/close sense input
48	NC			Not used
49	VST	O	C	Strobe pulse output for electronic volume
50	VCK	O	C	Clock output for electronic volume
51	VDT	O	C	Data output for electronic volume
52-54	NC			Not used
55	DRELAY	O	C	External relay output
56	TUNPW	O	C	Tuner power supply control output
57	LPFSW	O	C	Output for FIE
58,59	NC			Not used
60	RESET	I		Reset input
61	LDET	I		PLL lock sense input
62	NC			Not used
63	ASENS	I		ACC power sense input
64	BSENS	I		Back up power sense input

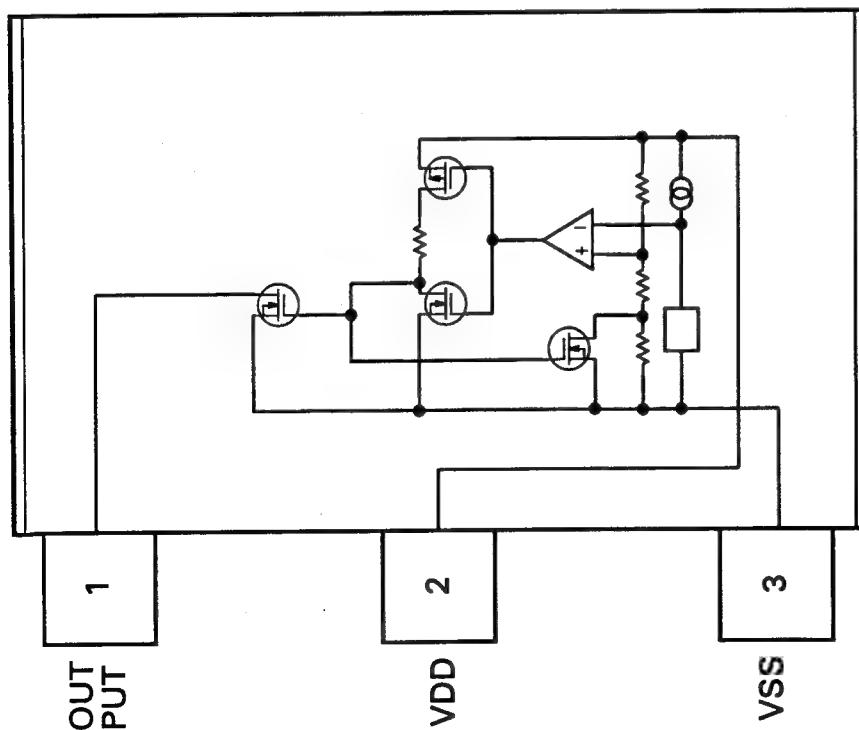
Pin No.	Pin Name	I/O	Format	Function and Operation
65	DSENS	I		Grille detach sense
66	CLKIN	I		Clock input
67	NC			Not used
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			Connect to GND
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0			A/D converter reference voltage
76	SL	I		SD level input from tuner
77	TEMP	I		Temperature detect input
78	VDSENS	I		VD power supply short detection input
79	DSCSNC	I		Disc sense input
80	EJTSNC	I		Disc eject position sense input

*PDR027A



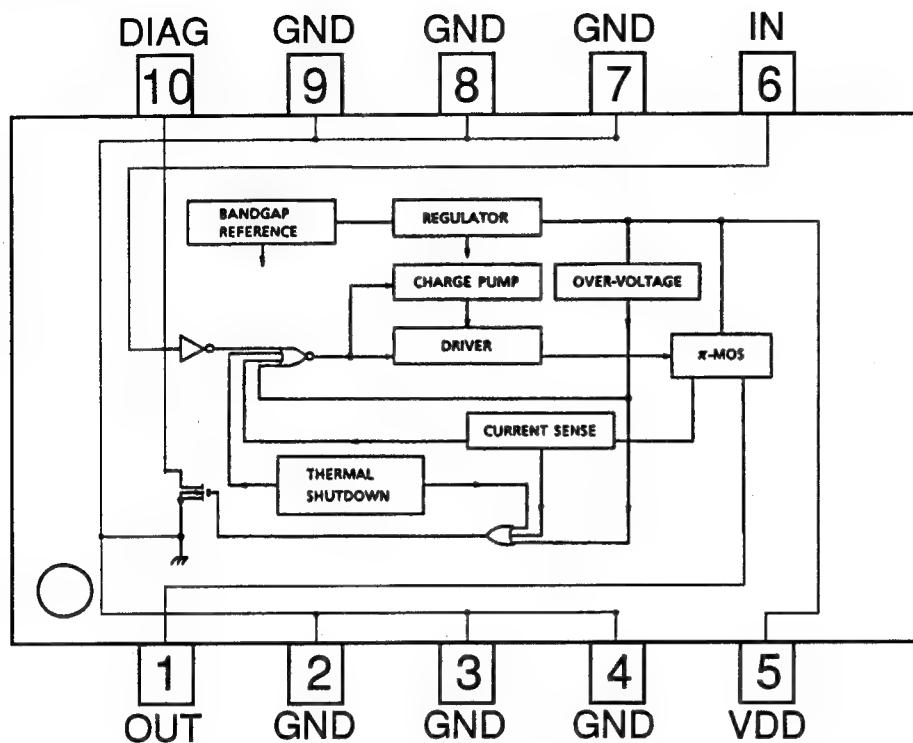
Format	Meaning
C	C MOS
N	N channel open drain

*S-80734AN



DEH-59,52,525,49,42,425,225,523,323,223

TPD1018F



8. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/OS000J, RS1/OS000J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

====Circuit Symbol & No. Part Name=====	Part No.	====Circuit Symbol & No. Part Name=====	Part No.
Unit Number : CWM4485(DEH-59/UC)		R 441 442 506 537 539 624 625	RS1/10S0R0J
Unit Name : Tuner Amp Unit		R 443 444	RD1/4PU222J
MISCELLANEOUS		R 445 446	RS1/10S162J
IC 451	SN761025DL	R 459 460 633	RS1/10S272J
IC 501	PM2004A	R 461 462	RS1/10S151J
IC 551	PAL003A	R 463 464	RS1/10S101J
IC 601	PDR027A	R 474 477 523 571 580 954 955 972 975	FS1/10S103J
IC 602	S-80734AN	R 475 476	RD1/4PU471J
IC 961	TPD1018F	R 501	FS1/8S102J
Q 421 431 432	FMG3A	R 502 511 657 668	RS1/10S222J
Q 423 441	DTA124ES	R 503 608 609 610 651 652	RD1/4PU472J
Q 501 631 953 971 972	2SC2458	R 504	RD1/4PU223J
Q 502	DTC114ES	R 507	RS1/8S473J
Q 551	DTC144ES	R 508	RS1/10S102J
Q 632 992	FMC2A	R 509 526	RS1/10S472J
Q 641	DTC114ES	R 513 528 664 951 978 983 993	FS1/10S472J
Q 651	2SA1048	R 514 607 627 659 956 971 973 974 976	FS1/10S473J
Q 653	2SB1236	R 515 516 518	RD1/4PU681J
Q 654 952	DTC124ES	R 517	RD1/4PU681J
Q 951	2SB1243	R 519 520	FS1/10S392J
Q 973	2SD1859	R 521	FS1/10S152J
Q 981 991	2SD2396	R 522	FS1/10S682J
Q 982 983	2SA1674	R 524	FS1/10S561J
Q 984	FMG1A	R 525	RD1/4PU272J
D 503 504 601 954 955	1SS133	R 527	FS1/10S682J
D 611 612 631 632 951 952 961 962	1SR139-200	R 529	FS1/10S681J
D 633	LED	R 530	RS1/10S222J
D 657	BR4361F	R 531	FS1/10S103J
D 658 659 660	HZS6LB2	R 532	RS1/10S224J
D 953	MA153	R 533	FS1/BS0R0J
D 971	HZS9LA2	R 534 605 665 958 985 986	RD1/4PU102J
D 972	HZS7LC3	R 536	RS1/BS102J
D 973	HZS7LC2	R 570	RS1/BS103J
D 974	1SR139-200	R 579	RS1/10S331J
D 981	HZS6LB1	R 581 582 584 642	RD1/4PU102J
D 992	HZS9LB3	R 583	RS1/10S562J
L 501	Ferri-Inductor	R 601	RD1/10SE223D
L 502 601	Ferri-Inductor	R 602	RD1/4PU104J
L 503 631	Ferri-Inductor	R 603	RS1/10S333J
L 602	Ferri-Inductor	R 604	RS1/10S393J
L 651	Ferri-Inductor	R 606	RD1/10S124J
TH 601	Thermistor	R 621 622 638 639	RD1/4PU473J
X 501	Crystal Resonator 7.2MHz	R 630	RD1/4PU473J
X 601	Ceramic Resonator 4.19MHz	R 631	RD1/4PU103J
BZ 601	FM/AM Tuner Unit	R 632	RD1/BS223J
	Buzzer	CSS1379	
RESISTORS		R 634 952 953	RD1/4PU331J
R 421 422	RS1/10S104J	R 635	RD1/4PU103J
R 431	RS1/8S471J	R 641	RD1/10S202J
R 432	RS1/10S471J	R 653 654 655 681 683 684	RD1/4PU222J
R 433 434 478 691 693	RS1/10S102J	R 656	RD1/4PU472J
R 435 436 437 438 473	RS1/10S223J	R 658	RS1/BS222J
		R 661 981	RD1/10S1R0J
		R 682	RD1/4PU222J
		R 688	RD1/4PU681J
		R 692	RD1/BS102J

DEH-59,52,525,49,42,425,225,523,323,223

=====Circuit Symbol & No. Part Name=====			Part No.	=====Circuit Symbol & No. Part Name=====			Part No.
R 977			RS1/10S101J	X 901		Ceramic Resonator 4.97MHz	CSS1312
R 982			RD1/4PU471J	IL 901	902	Lamp 14V 40mA	CEL1341
R 984			RS1/8S472J	IL 905		Lamp 14V 40mA	CEL1341
R 987			RS1/10S221J			LCD	CAW1329
R 991 992			RD1/4PU221J				
R 994			RS1/10S122J				
CAPACITORS				R 901	902	903	RS1/8S222J
C 421 422			CEA3R3M50LL	R 906			RS1/10S470J
C 431 432 433 434 457 458 463 464 473 570			CEA100M16LL	R 908	909		RS1/10S0R0J
C 435 436 437 438			CCSQCH220J50	R 911	912	913	RS1/10S471J
C 443 444			CKSQYB473K25				
C 445 446 447			CKSQYB102K50	C 901	902	903	CKSQYB103K50
C 451 452 469 470 474 490 607			CEA2R2M50LL	C 905			CEA470M6R3LS
C 453 454 604			CEA4R7M35LL	C 906			CKSQYB473K50
C 455			CKSYF104Z25				
C 456			CKSQYF104Z25				
C 459 460			CKSQYB822K50				
C 461 462 572 574			CEA010M50LL				
C 465 466			CKSQYB152K50	IC 1			PA4023A
C 467 468			CCSQCH101J50	IC 2			PA4024A
C 471 472			CKSQYB333K25	Q 1	31	202	2SC2412KLN
C 477 482			CKSQYB104K50	Q 2	203		DTC124EU
				Q 3			3SK263
C 478 501 508 517 519 527 529 590 982			CKSQYB103K50				
C 481			CEA470M10LL	Q 201			2SK932
C 483 484			CKSQYB183K25	D 1	2		RD39JS
C 485 486 507 513 992			CKSQYB102K50	D 4			1SV251
C 504 651 972 974 991			CKSQYB473K50	D 5	7	8	KV1410
				D 6	201	202	MA157
C 505			CCSCH101J50				
C 506			CKSYB103K50	D 231			SVC253
C 502 503 509 535			CKSQYB223K50	L 2	4		CTC1108
C 510 512			CEA220M10LL	L 3			LCTB2R2K2125
C 515			CKSQYB223K50	L 5			CTC1107
				L 51			LAU150K
C 516	4.7µF/16V		CCH1165				
C 518	4.7µF/16V		CCH1165	L 201			LAU4R7K
C 520			CKLRS473K16	L 202			LAU330K
C 522 591			CEA220M10LL	L 203			CTF1287
C 523			CKSQYB104K50	L 208			LAU121K
				L 231			LAU3R3J
C 524 525			CCSQCH150J50				
C 526			CKSYB332K50	T 31			CTE1116
C 530 536			CKSQYB103K50	T 51			CTC1136
C 531			CCSQCCH101J50	CF 51	52	53	CTF1290
C 532			CKSQYB103K50	CF 232			CTF1348
				X 151			CSS1365
C 539			CKSQYB473K50				
C 551 553 554			CEAR22M50LL	X 231			Crystal Resonator 10.26MHz CSS1111
C 552			CEAR22M50LL	VR 154			Semi-fixed 68kΩ(B) CCP1211
C 556	3300µF/16V		CCH1150				
C 571			CEA330M10LL				
C 573			CKSYB104K50	R 1	2		RS1/16S225J
C 605			CCSQCCH101J50	R 4			RS1/16S154J
C 606			CKSQYB473K50	R 5			RS1/16S391J
C 652			CEA4R7M35LL	R 6	10	202	RS1/16S223J
C 961			CKSYB473K50	R 7	247		RS1/16S123J
C 971	470µF/16V		CCH-114	R 8	17		RS1/16S332J
C 973			CEA101M10LL	R 9			RS1/16S473J
C 981			CEAS331M10	R 11			RS1/16S124J
C 983			CEA101M16LL	R 13			RS1/16S563J
C 993			CEA101M10LS	R 15			RS1/16S271J
Unit Number : CWM4501				R 16			RS1/16S104J
Unit Name : Key Board Unit				R 18			RS1/16S332J
MISCELLANEOUS				R 31			RS1/16S470J
IC 901				R 32	215		RS1/16S822J
IC 902				R 33			RS1/16S822J
D 901 902			PD6122A				
D 903			RPM-678CBR	R 34	35		RS1/16S331J
L 901	Inductor		DA204K	R 51			RS1/16S271J
			MA3051L	R 52			RS1/16S560J
			LCTB4R7K3216	R 55			RS1/16S102J
				R 56			RS1/16S823J

DEH-59,52,525,49,42,425,225,523,323,223

=====Circuit Symbol & No. Part Name=====		Part No.	=====Circuit Symbol & No. Part Name=====		Part No.
R 61		RS1/16S392J	C 103		CKSRYB682K25
R 62		RS1/16S273J	C 104		CEA2R2M50LL
R 101		RS1/16S272J	C 106		CCSRCH151J50
R 102		RS1/16S682J	C 151		CKSRYB472K50
R 103		RS1/16S333J	C 153 157		CEA3R3M50LL
R 104		RS1/16S334J	C 154		CKSQYB104K16
R 105		RS1/16S683J	C 158		CKSYB474K16
R 107		RS1/16S222J	C 159		CEA220M6R3LL
R 151		RS1/16S222J	C 161 209		CKSQYB104K16
R 152		RS1/16S393J	C 162		CEA3R3M50LL
R 239		RS1/16S104J	C 163		CKSRYB102K50
R 155		RS1/16S273J	C 170 202		CCSRCH100D50
R 156		RS1/16S243J	C 201 250		CCSRCH471J50
R 157		RS1/16S203J	C 203 235		CKSRYB332K50
R 160		RS1/16S222J	C 204 205 236 244		CKSQYB473K16
R 161		RS1/16S563J	C 206 233		CKSQYB104K16
R 162		RS1/16S105J	C 207		CCSRCH560J50
R 163		RS1/16S223J	C 211		CCSRCH101J50
R 203		RS1/16S225J	C 212		CEA470M6R3LL
R 204		RS1/16S103J	C 216		CCSRCH101J50
R 206		RS1/16S220J	C 217		CEA1R5M50LL
R 207		RS1/16S101J	C 219		CCSRCH471J50
R 208 217		RS1/16S102J	C 220 230		CKSRYB103K25
R 209		RS1/16S471J	C 231		CCSRCH330J50
R 214		RS1/16S822J	C 232		CCSRCH150J50
R 231		RS1/16S272J	C 237		CCSRCH180J50
R 232		RS1/16S473J	C 239		CKSRYB472K50
R 237		RS1/16S103J	C 240 242		CEA47M50LL
R 238		RS1/16S104J	C 243		CEA43M50LL
R 239		RS1/16S104J	C 245		CKSRYB183K25
R 240		RS1/16S332J	C 246		CKSQYB473K16
R 241		RS1/16S202J			
R 243		RS1/16S183J	Unit Number : CWX1889		
R 244		RS1/16S472J	Unit Name : Control Unit		
CAPACITORS					
C 1		CCSQCH060D50	IC 101		UPC2572GS
C 2		CCSRCH020C50	IC 201		UPD63702GF
C 4		CCSRCH820J50	IC 301		XLA6997FP
C 6		CCSRCH820J50	IC 302		XRA6285FP
C 8 18 25 31 52 59 62 105 107 213	CKSRYB103K25		IC 601		TA2063F
C 9 34 56 152 160 241	CKSQYB104K16		IC 701		PQ05TZ51
C 10		CCSRCH0R5C50	Q 101		2SD1664
C 11		CEA010M50LL	Q 102		UMD2N
C 12 13 17 19 20	CKSRYB222K50	Q 601 602			2SD1781K
C 14		CCSRCH220J50	Q 603		2B709A
C 15		CCSRCH060D50	D 601		MA151WA
C 16		CCSRCH080D50	D 701 702		1SR154-400
C 21		CEA100M16LL	D 801 802	LED	L200IRX
C 22		CCSRTH090D50	X 201	Ceramic Resonator 16.93MHz	GS1363
C 23		CCSRTH120J50	S 801 802	Switch(Home, Clamp)	SN1028
C 24		CCSRCH471J50			
C 26		CCSRCH101J50	R 101		IS1/8S100J
C 32		CKSRYB472K50	R 102		IS1/8S120J
C 33		CCSRCH050C50	R 103		IS1/16S102J
C 36		CCSRHH201J50	R 104		IS1/16S822J
C 51		CKSRYB223K25	R 105		IS1/16S682J
C 54		CCSRCH470J50			
C 55		CKSQYB223K25	R 106		IS1/16S183J
C 57		CKSRYB472K50	R 107		IS1/16S822J
C 58 234	CEA330M10LL	R 108			IS1/16S333J
C 60		CKSRYB102K50	R 109		IS1/16S683J
C 61		CKSRYB102K50	R 110		IS1/16S134J
C 63		CEAR22M50LL	R 111		IS1/16S273J
C 101		CEA100M10NPLL	R 112		IS1/16S222J
C 102		CKSRYB182K50	R 113 114 607		IS1/16S103J
			R 115		IS1/16S102J
			R 116 117		IS1/16S163J

DEH-59,52,525,49,42,425,225,523,323,223

=====Circuit Symbol & No. Part Name=====		Part No.
R 201		RS1/16S104J
R 202		RS1/16S473J
R 304 501		RS1/16S0R0J
R 505		RS1/16S102J
R 507		RA4C102J
R 508		RA4C681J
R 510		RS1/10S0R0J
R 601 602		RS1/16S102J
R 603 604		RS1/16S223J
R 605 606		RS1/16S162J
R 801 802		RS1/8S751J
CAPACITORS		
C 101 601 703		CEV101M6R3
C 102		CKSQYB104K16
C 103		CEV470M6R3
C 104		CKSYB334K16
C 105		CCSRCH330J50
C 106 304		CKSRYB103K25
C 107 603 604		CEV4R7M35
C 108		CKSQYB273K50
C 109		CCSRCH101J50
C 110 202		CKSQYB104K16
C 111		CKSRYB332K50
C 112		CKSQYB473K16
C 113		CKSRYB103K25
C 114		CKSRYB391K50
C 115		CCSRCH121J50
C 116		CKSRYB682K25
C 117		CKSRYB333K16
C 118 201		CKSYB334K16
C 119		CKSYB334K16
C 120 121 702		CKSYB334K16
C 122 124		CKSQYB104K16
C 123		CKSRYB472K50
C 125		CCSRCH060D50
C 126		CKSRYB153K25
C 127		CCSRCH102J25
C 203		CKSQYB104K16
C 303		CEV470M16
C 305 306		CKSRYB103K25
C 502		CKSRYB471K50
C 602		CKSQYB104K16
C 605 606		CKSRYB152K50
C 607		CEV220M6R3
C 701	22μF/6.3V	CCH1233
C 901 903		CCSRCH471J50
C 902		CCSRCH271J50
C 904		CCSRCH101J50

Unit Number :
Unit Name : Detector P.C. Board

Q 1 2 Photo Transistor CPT-230S-X

Miscellaneous Parts List

M 1	PU Unit	CGY1070
M 2	Motor Unit(Spindle)	CXA9100
M 3	CRG Motor Unit(Carriage)	CXA8986
	Load Motor Unit(Loading)	CXA8702

- The DEH-52/UC, DEH-525/UC, DEH-523/ES, DEH-49/UC, DEH-42/UC, DEH-425/UC, DEH-323/ES, DEH-225/UC, and DEH-223/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-59/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-59/UC Parts List is given on page 23.

Tuner Amp Unit

Circuit Symbol & No.	DEH-59/UC	DEH-52/UC	DEH-525/UC	DEH-523/ES	DEH-49/UC	DEH-42/UC	DEH-425/UC	DEH-323/ES	DEH-225/UC	DEH-223/ES
Circuit Symbol & No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
IC961	TPD1018F	****	****	****	****	****	****	****	****	****
Q421	FMG3A	****	FMG3A							
Q423	DTA124ES	****	DTA124ES							
Q432	FMG3A	****	FMG3A							
Q631	2SC2458	****	2SC2458							
Q632	FMC2A	****	FMC2A	****	****	****	****	****	****	****
Q641	DTC114ES	****	****	DTC114ES	****	****	****	****	****	****
D611,612	1SR139-200	****	****	****	****	****	****	****	****	****
D631,632	1SR139-200	****	1SR139-200							
D633	BR4361F	****	BR4361F	****	****	****	****	****	****	****
D657	HZS6LB2									
D658,659,660	MA153									
BZ601	CPV1011	****	****	CPV1011	****	****	****	****	****	****
L631	LAU2R2K	****	LAU2R2K	****	****	****	****	****	****	****
R421,422	RS1/10S104J									
R433,434	RS1/10S102J									
R437,438	RS1/10S223J									
R477	RS1/10S103J	****								
R478	RS1/10S102J	****								
R506	RS1/10S0R0J									
R602	RD1/4PU104J	RD1/4PU333J	RD1/4PU473J	RD1/4PU333J	RD1/4PU104J	RD1/4PU333J	RD1/4PU473J	RD1/4PU333J	RD1/4PU473J	RD1/4PU333J
R603	RS1/10S333J	RS1/10S473J	RS1/10S333J	RS1/10S333J	RS1/10S473J	RS1/10S333J	RS1/10S473J	RS1/10S333J	RS1/10S473J	RS1/10S333J
R625	RS1/10S0R0J									
R626	****	****	****	****	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J	RS1/10S0R0J
R627	RS1/10S473J									
R628	****	****	****	****	RS1/10S473J	RS1/10S473J	RS1/10S473J	RS1/10S473J	RS1/10S473J	RS1/10S473J
R630	RD1/4PU473J	****	****	RD1/4PU473J	****	****	****	****	****	****
R631	RD1/4PU103J	****	****	RD1/4PU103J	****	****	****	****	****	****
R632	RS1/BS223J	****	****	RS1/BS223J	****	****	****	****	****	****
R633	RS1/10S272J	****	****	RS1/10S272J	****	****	****	****	****	****
R634	RD1/4PU331J	****	****	RD1/4PU331J	****	****	****	****	****	****
R635	RD1/4PU103J	****	****	RD1/4PU103J	****	****	****	****	****	****
R641	RS1/10S202J	****	****	RS1/10S202J	****	****	****	****	****	****
R642	RD1/4PU102J	****	****	RD1/4PU102J	****	****	****	****	****	****
R958	RD1/4PU102J	****	****	RD1/4PU102J	****	****	****	****	****	****
C421,422	CEA3R3M50LL	****	CEA3R3M50LL							
C433,434	CEA100M16LL	****	CEA100M16LL							
C437,438	CCSQCH220J50	****	CCSQCH220J50							
C490	CEA2R2M50LL	****								
C511	****	****	****	CKSQYB103K50	****	CKSQYB103K50	****	CKSQYB103K50	****	CKSQYB103K50
C851	CKSQYB473K50									
C961	CKSQYB473K50									

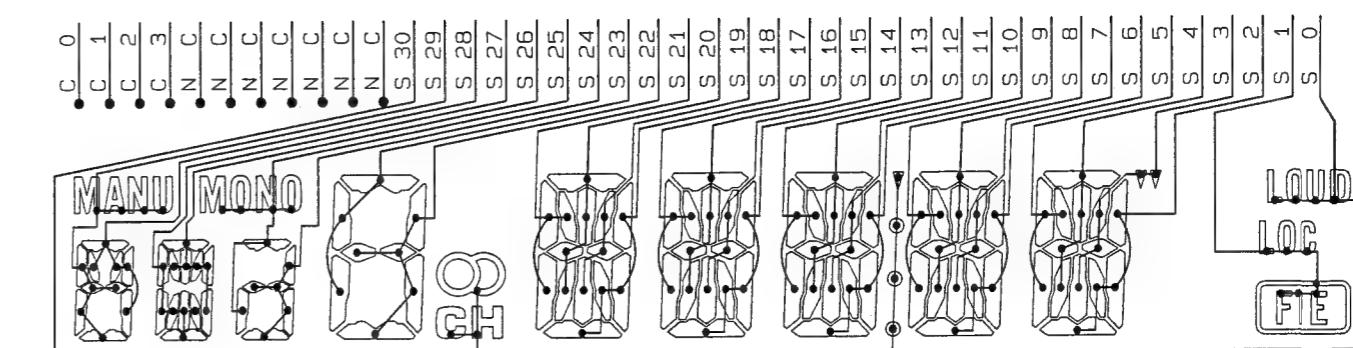
Key Board Unit

Circuit Symbol & No.	DEH-523/ES	DEH-323/ES
Circuit Symbol & No.	DEH-525/UC	DEH-425/UC
Circuit Symbol & No.	DEH-52/UC	DEH-42/UC
Circuit Symbol & No.	DEH-49/UC	DEH-225/UC
Circuit Symbol & No.	Part No.	Part No.
IC902	RPM-678CBR	****
D901,902	DA204K	****
D903	MA3051L	MA3056L
LCD	CAW1329	CAW1330
R905	****	CAW1330
R906	RS1/10S470J	****
C905	CEA470M6R3LS	****

9. LCD

- CAW1329 (DEH-59/UC, 52/UC, 525/UC, 523/ES)
- CAW1330 (DEH-49/UC, 42/UC, 425/UC, 323/ES, 225/UC, 223/ES)

SEGMENT



COMMON

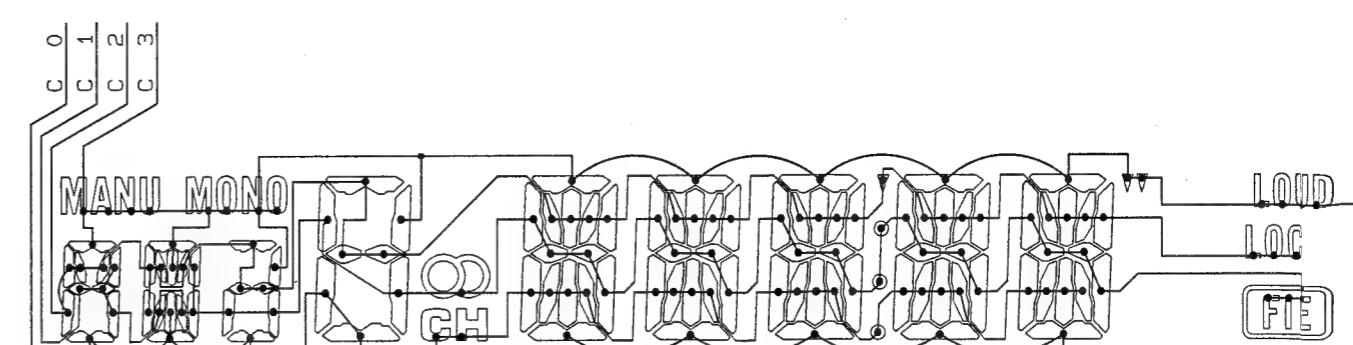


Fig. 5

10. BLOCK DIAGRAM

TUNER AMP UNIT

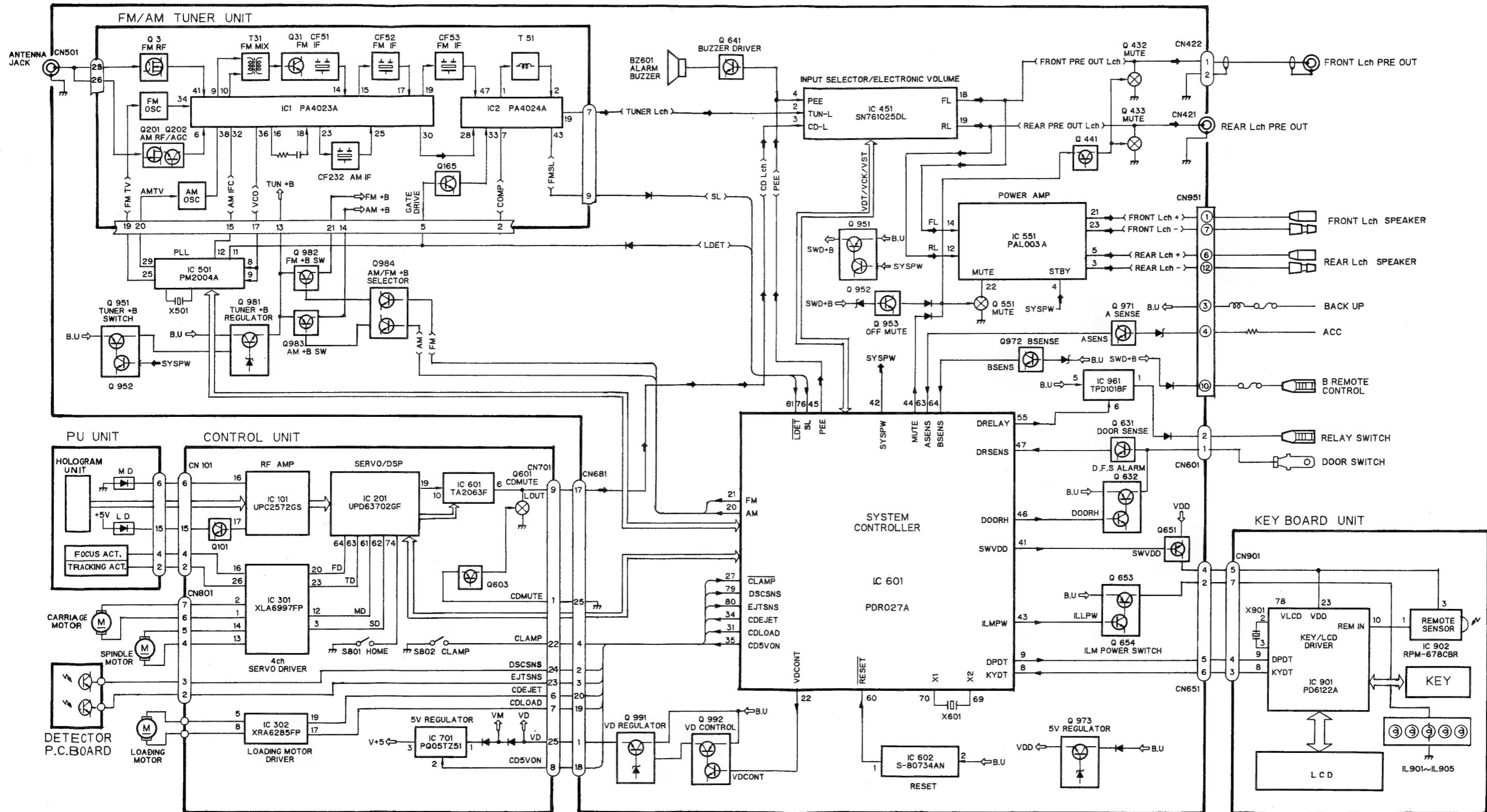


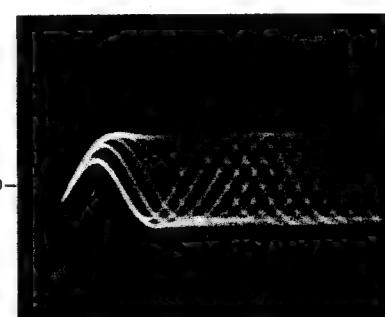
Fig. 6

● Waveforms

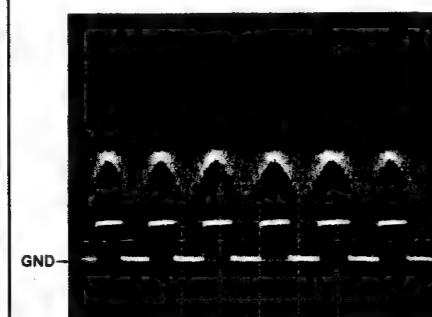
Note: 1. The encircled numbers denote measuring pointes in the circuit diagram.

2. Reference voltage
REFO: 2.5V

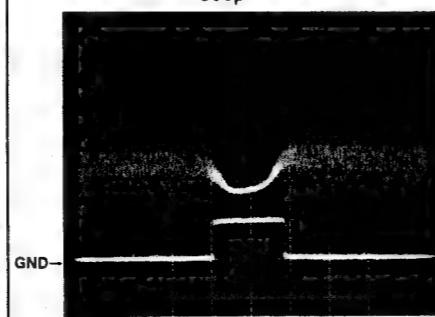
① RFO 0.5V/div. 0.5μs/div.
Normal mode: play



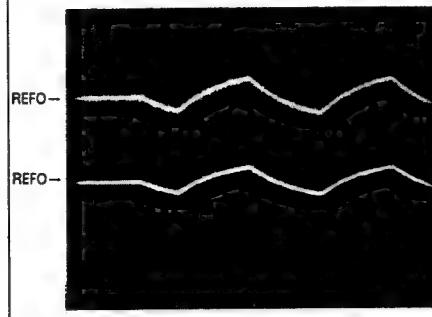
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Test mode: Tracking open



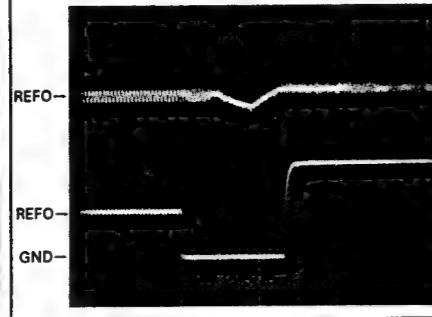
① CH1: RFO 1V/div. 0.5ms/div.
② CH2: MIRR 5V/div.
Normal mode: The defect part passes 800μm



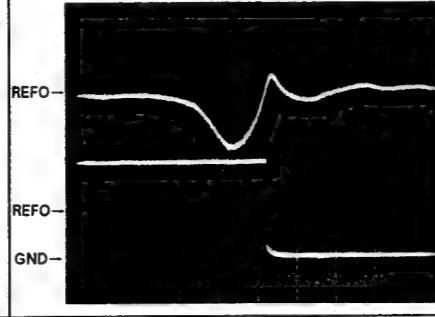
③ CH1: FIN 0.5V/div. 0.2s/div.
④ CH2: FO+ 2V/div.
Test mode: No disc, Focus close



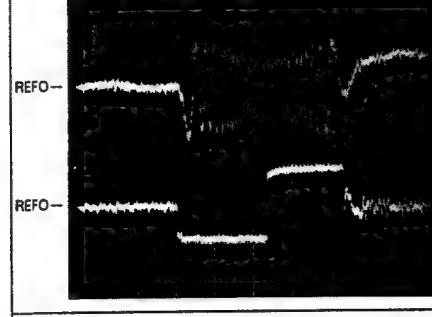
③ CH1: FIN 0.5V/div. 0.2s/div.
⑤ CH2: FOK 2V/div.
Normal mode: Focus close



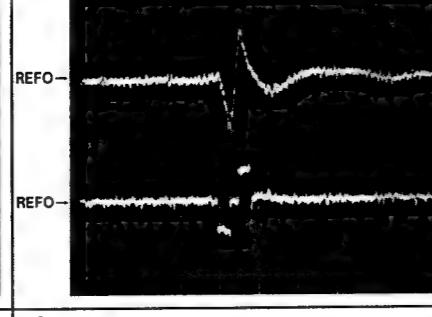
⑥ CH1: FEY 0.5V/div. 1ms/div.
⑦ CH2: XSI 2V/div.
Normal mode: Focus close



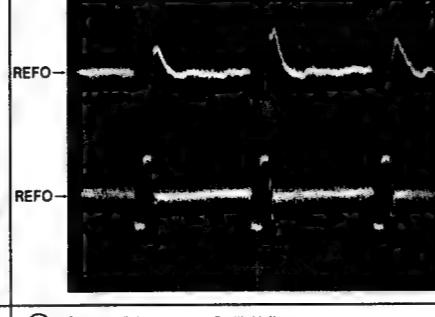
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 32 tracks jump (FWD)



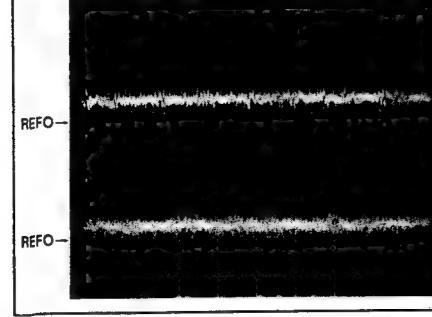
⑧ CH1: TEY 0.5V/div. 0.5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: Single jump (FWD)



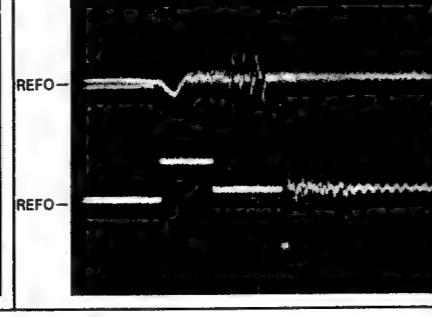
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑨ CH2: TIN 0.5V/div.
Test mode: 100 tracks jump (FWD)



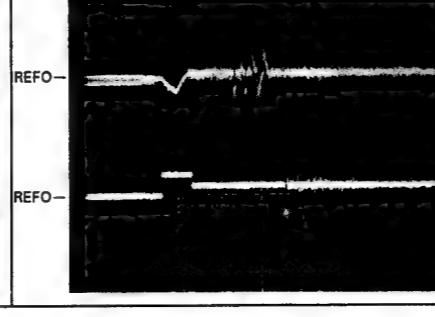
⑥ CH1: FEY 0.1V/div. 20ms/div.
③ CH2: FIN 0.2V/div.
Normal mode: Play



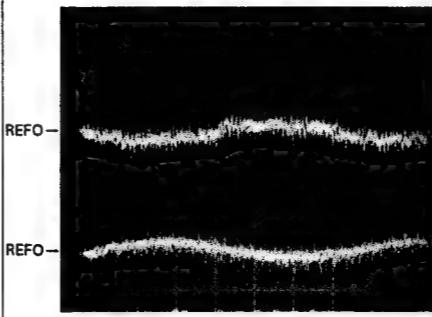
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (12cm)



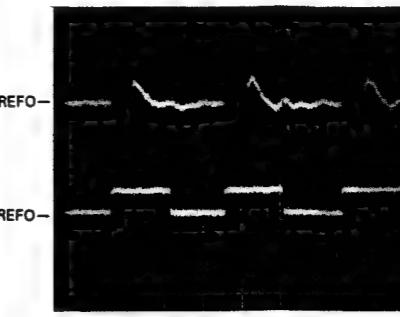
③ CH1: FIN 0.5V/div. 0.5s/div.
⑩ CH2: SIN 1V/div.
Normal mode: Focus close (8cm)



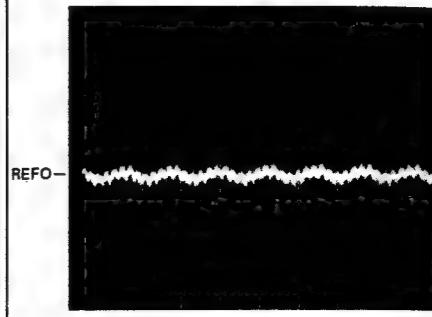
⑧ CH1: TEY 0.2V/div. 20ms/div.
⑨ CH2: TIN 0.2V/div.
Normal mode: Play



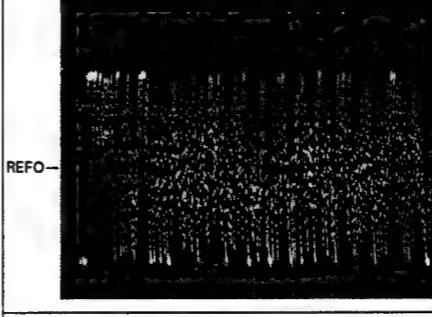
⑧ CH1: TEY 0.5V/div. 5ms/div.
⑪ CH2: SD 0.5V/div.



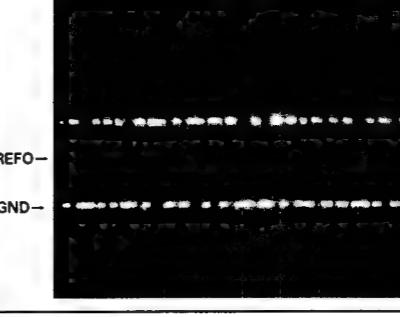
⑩ SIN 0.5V/div. 0.1s/div.
Normal mode: Play (12cm)



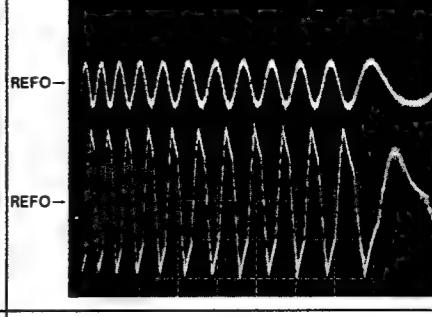
⑩ SIN 0.5V/div. 10ms/div.
Long Search (12cm)



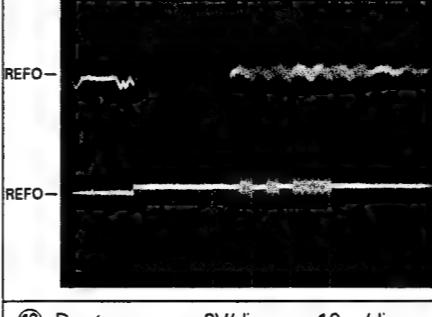
⑫ EFM 1V/div. 5μs/div.
Play



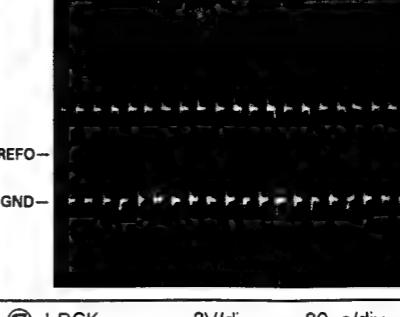
⑧ CH1: TEY 1V/div. 2ms/div.
⑬ CH2: TEC 1V/div.
Test mode: Focus close
Tracking open



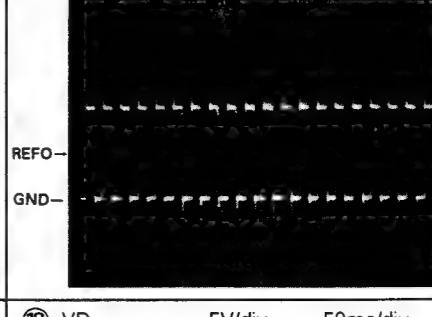
⑧ CH1: TEY 0.5V/div. 0.2s/div.
⑥ CH2: FEY 0.5V/div.
Normal mode: AGC after focus close



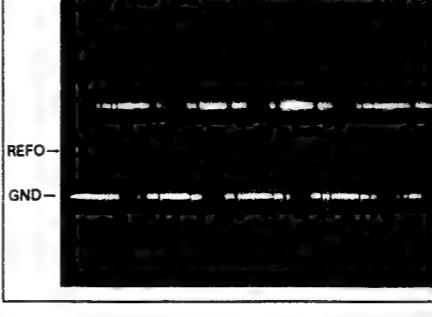
⑭ PLCK 2V/div. 0.5μs/div.
Play



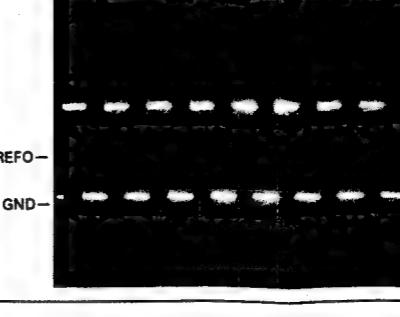
⑮ SCKO 2V/div. 1μs/div.
Play



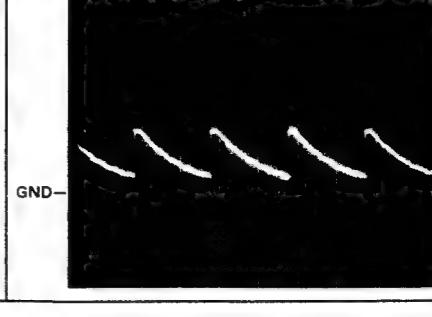
⑯ Dout 2V/div. 10μs/div.
Play



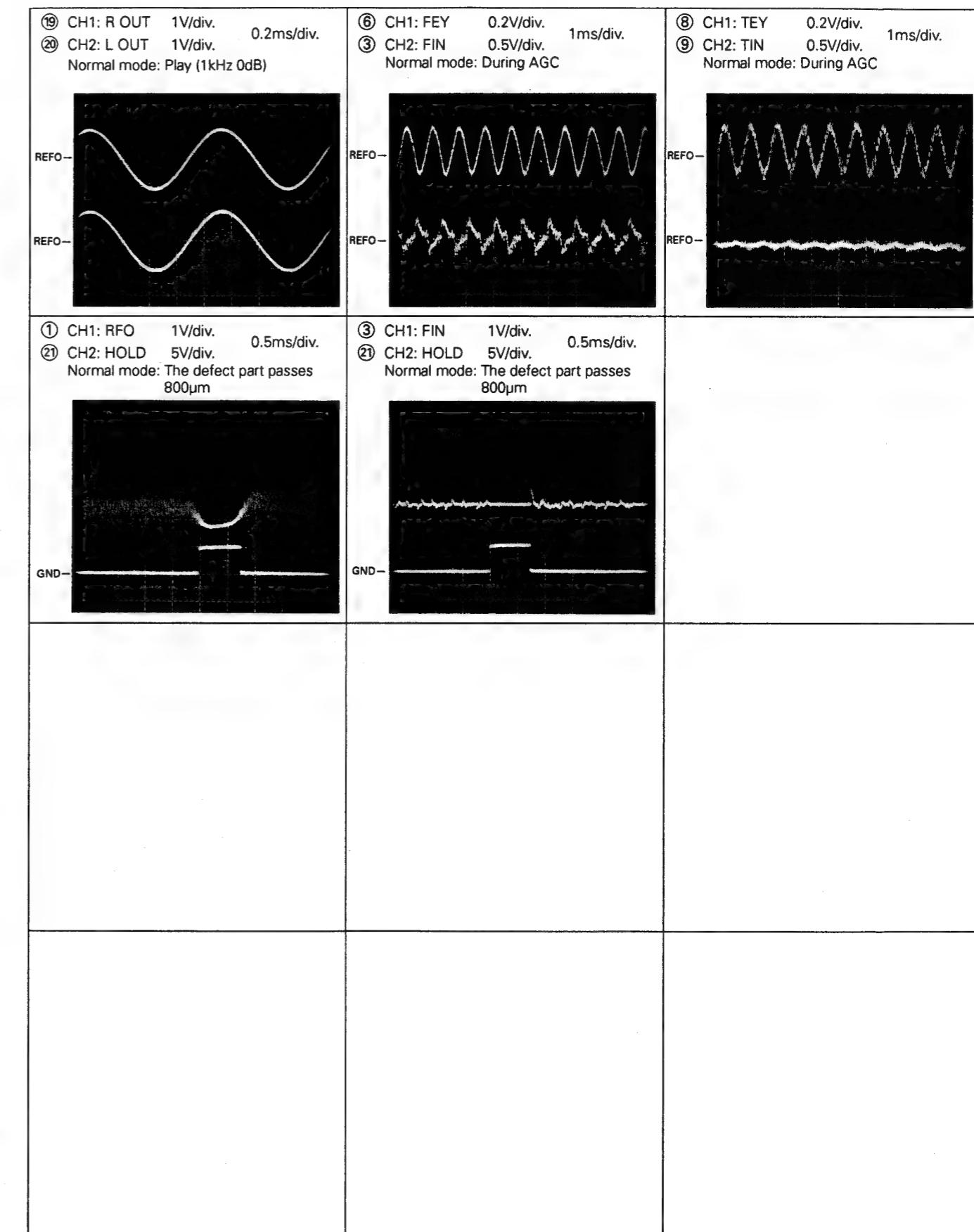
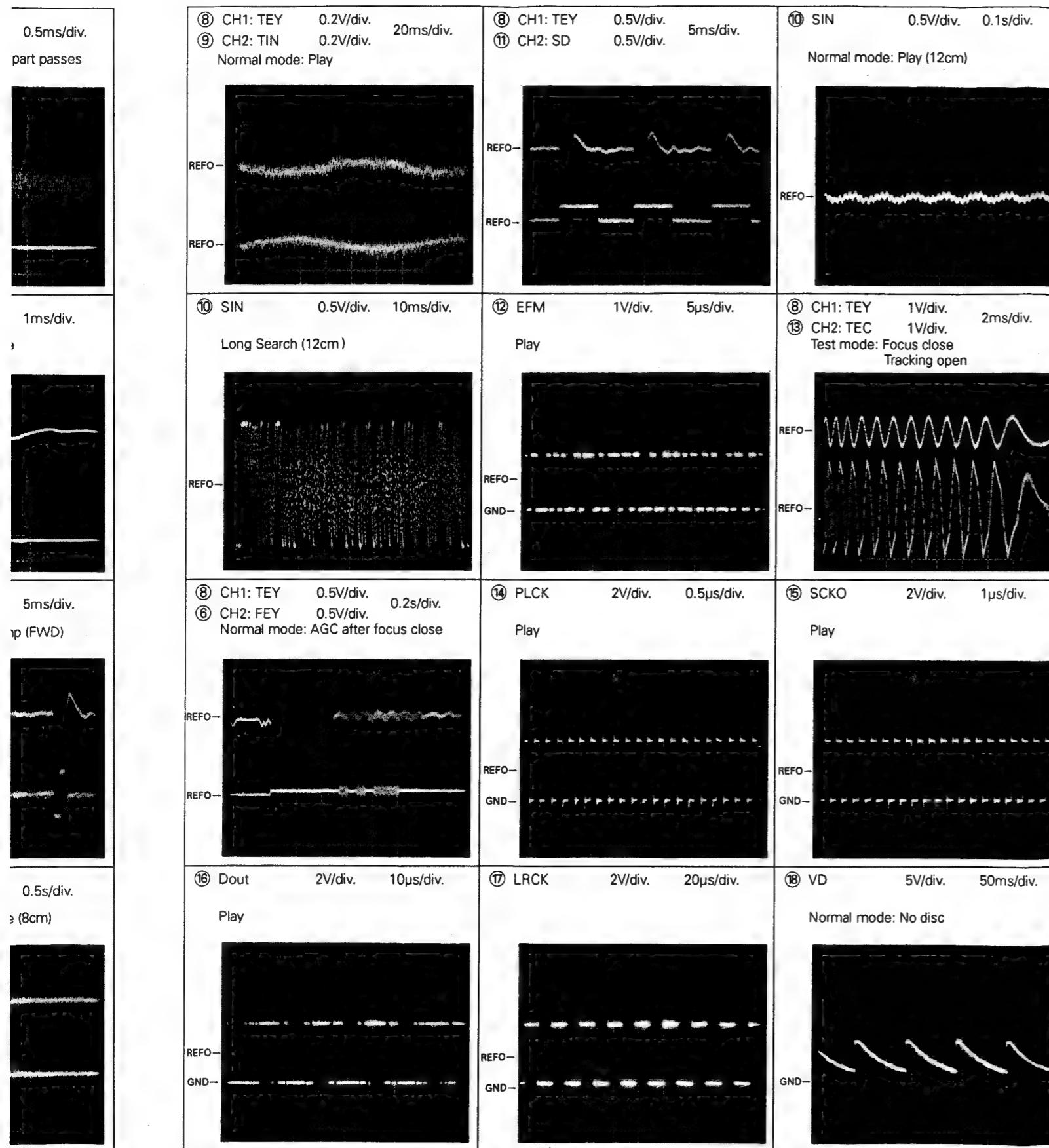
⑰ LRCK 2V/div. 20μs/div.
Play



⑱ VD 5V/div. 50ms/div.
Normal mode: No disc



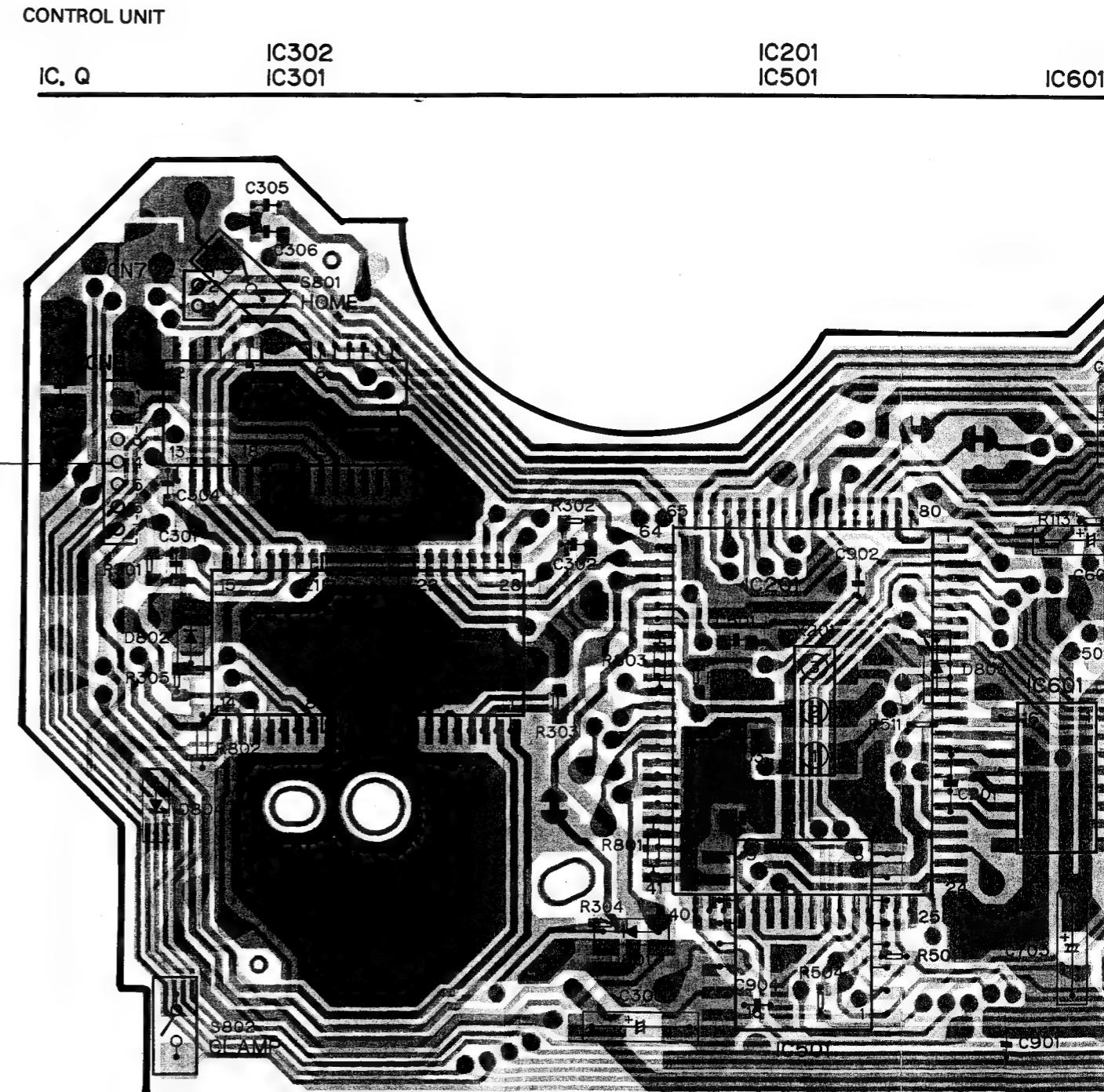
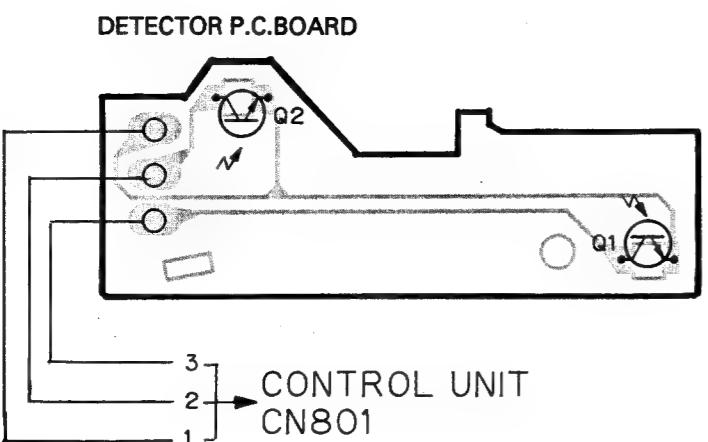
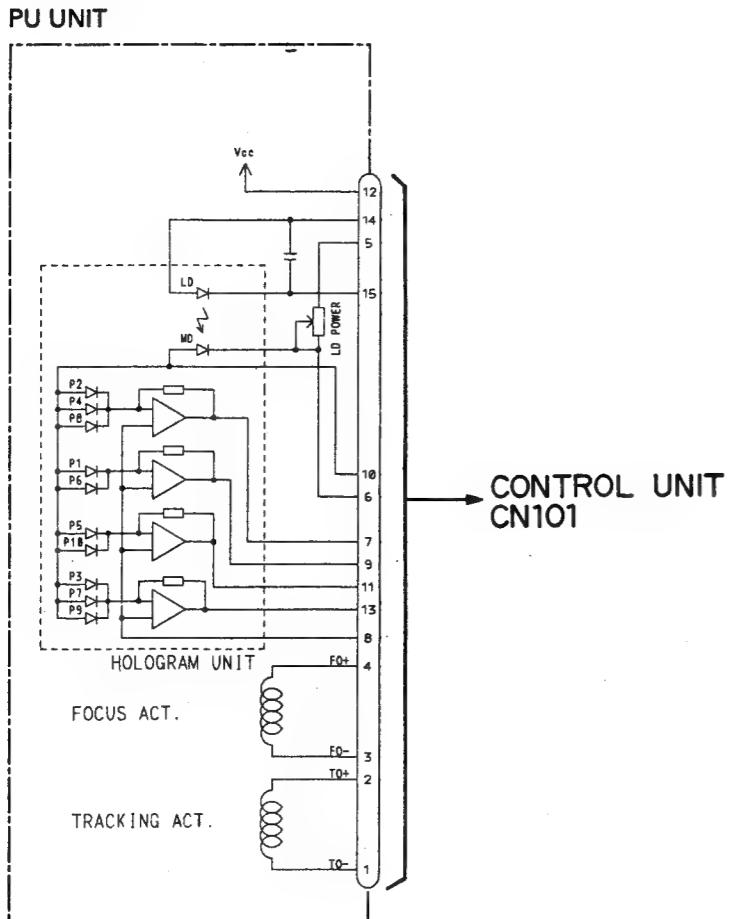
it diagram.



11. CIRCUIT DIAGRAM AND PATTERN

11.1 CD MECHANISM MODULE

● Connection Diagram



NOTE:
The parts mount
For further info

CONTROL UNIT

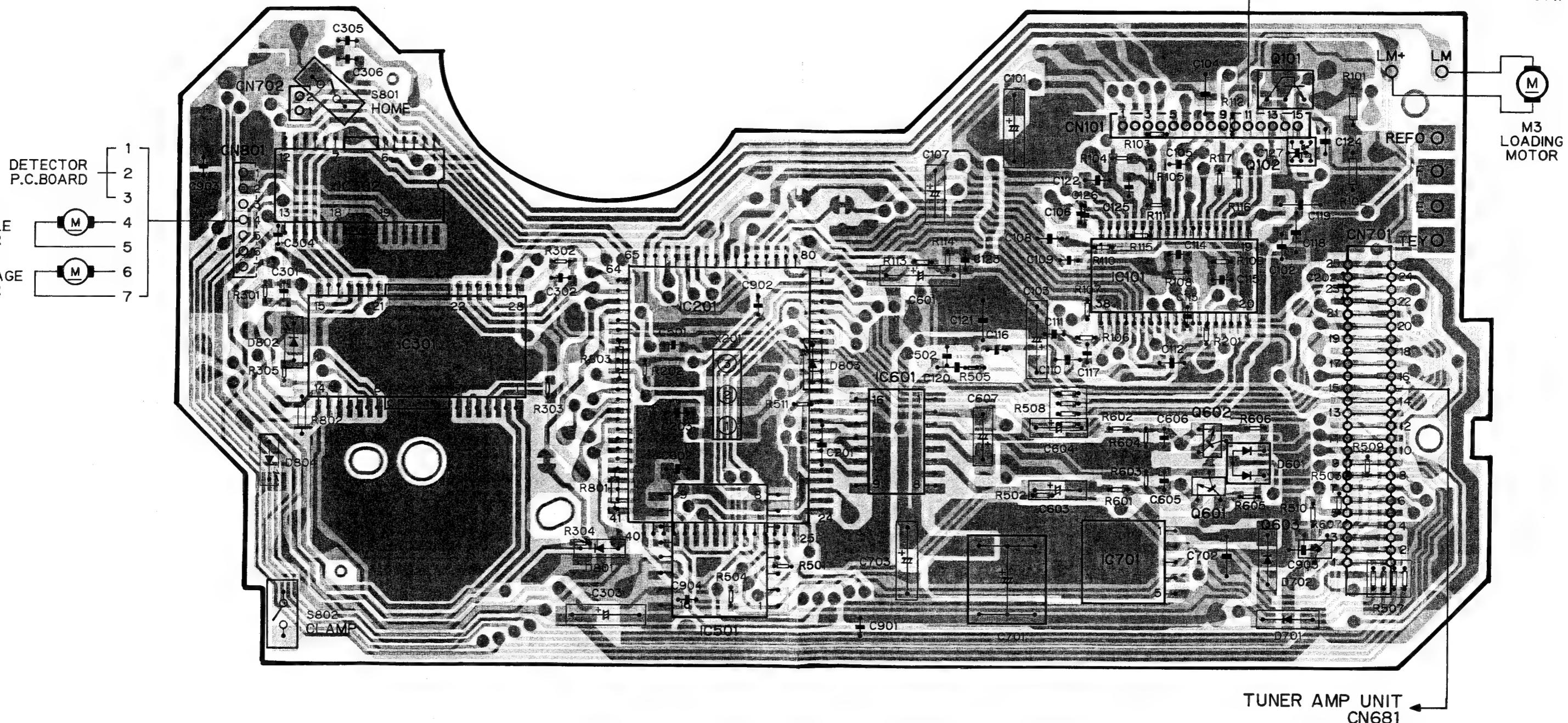
IC. Q
IC302
IC301IC201
IC501

IC601

IC701

IC101
Q602
Q601
Q101
Q102
Q603

PU UNIT

TUNER AMP UNIT
CN681

NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.

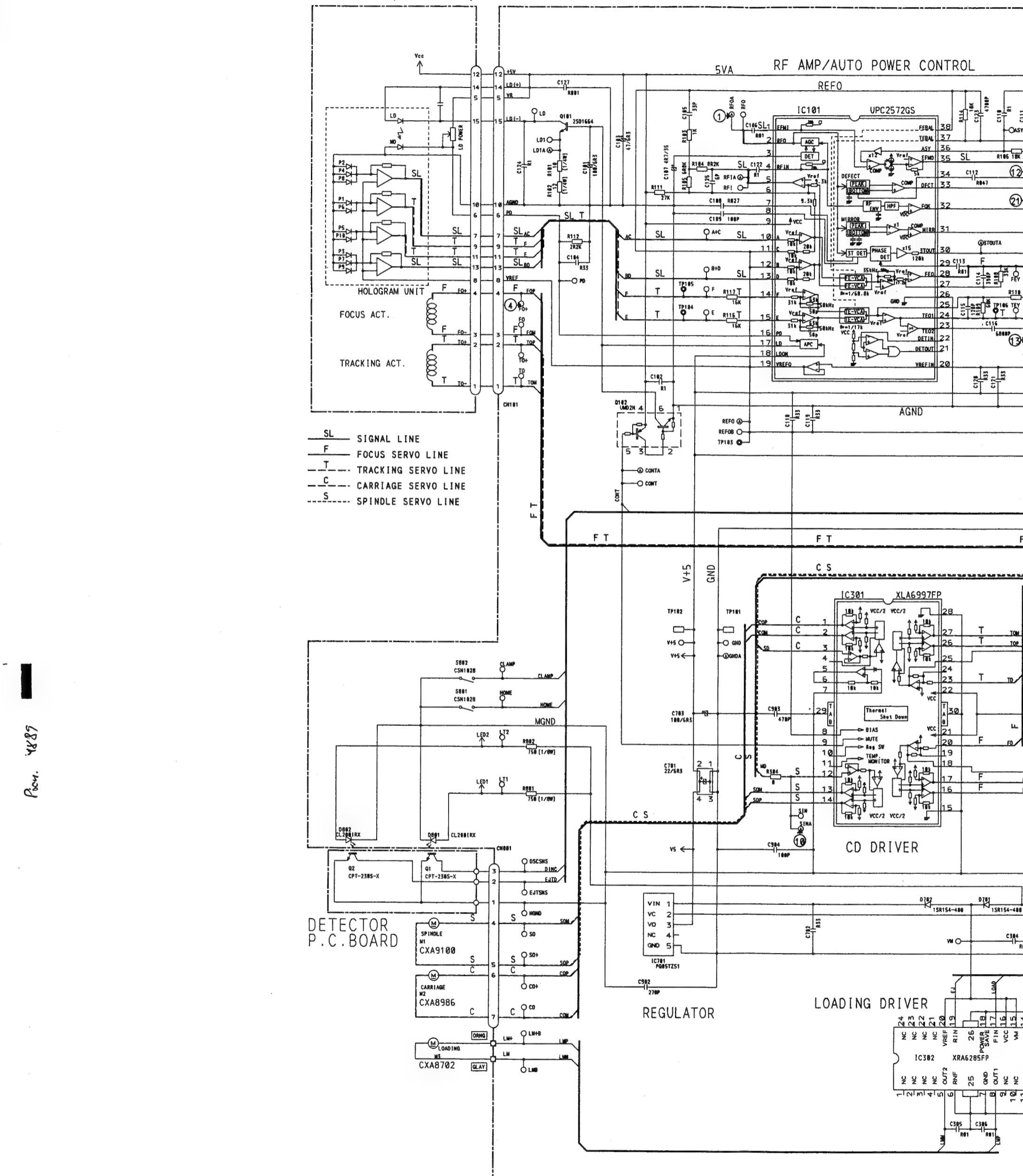
For further information for respective destinations, be sure to check with the schematic diagram.

Fig. 7

● Circuit Diagram

PU UNIT (CGY1070)

CONTROL UNIT



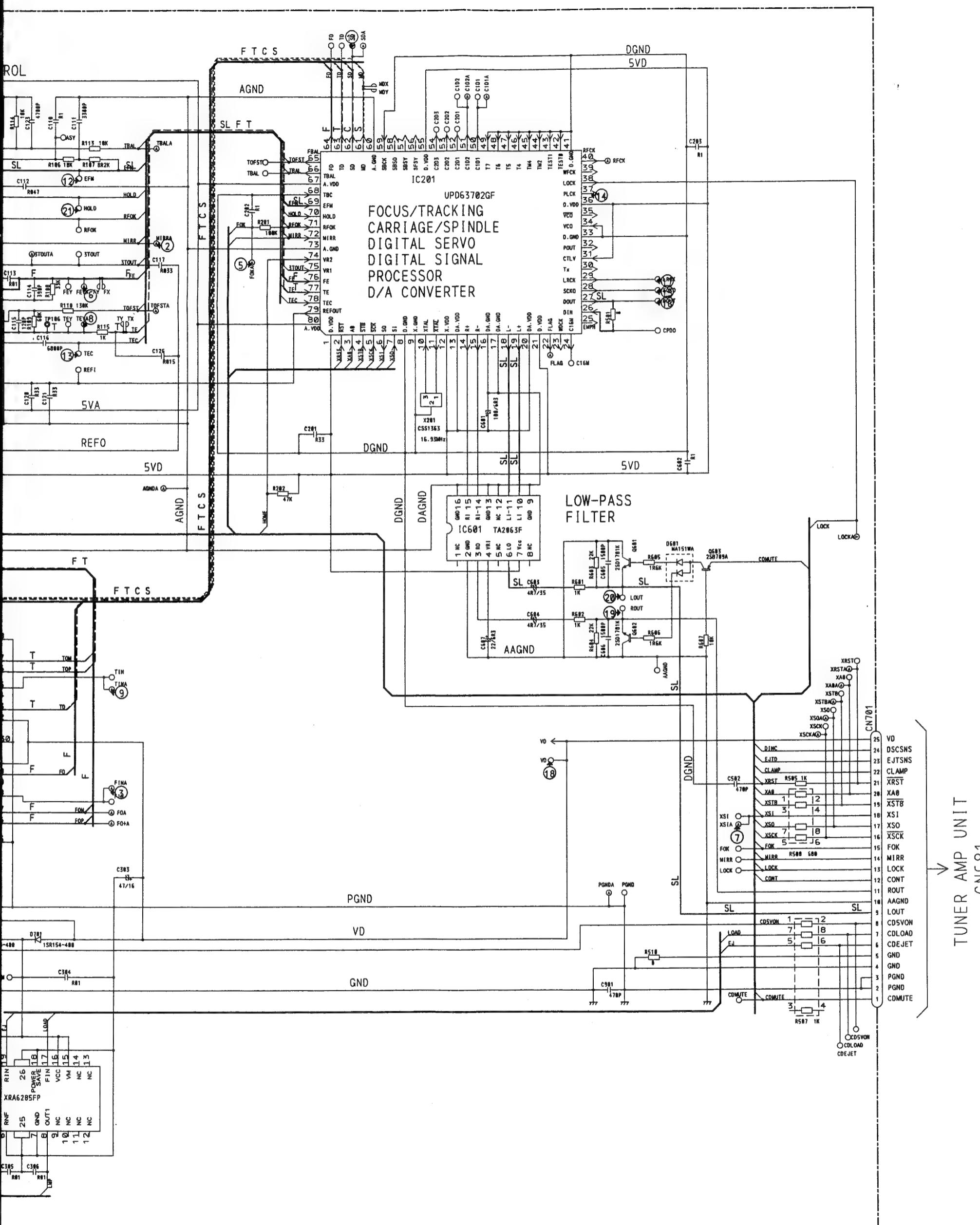
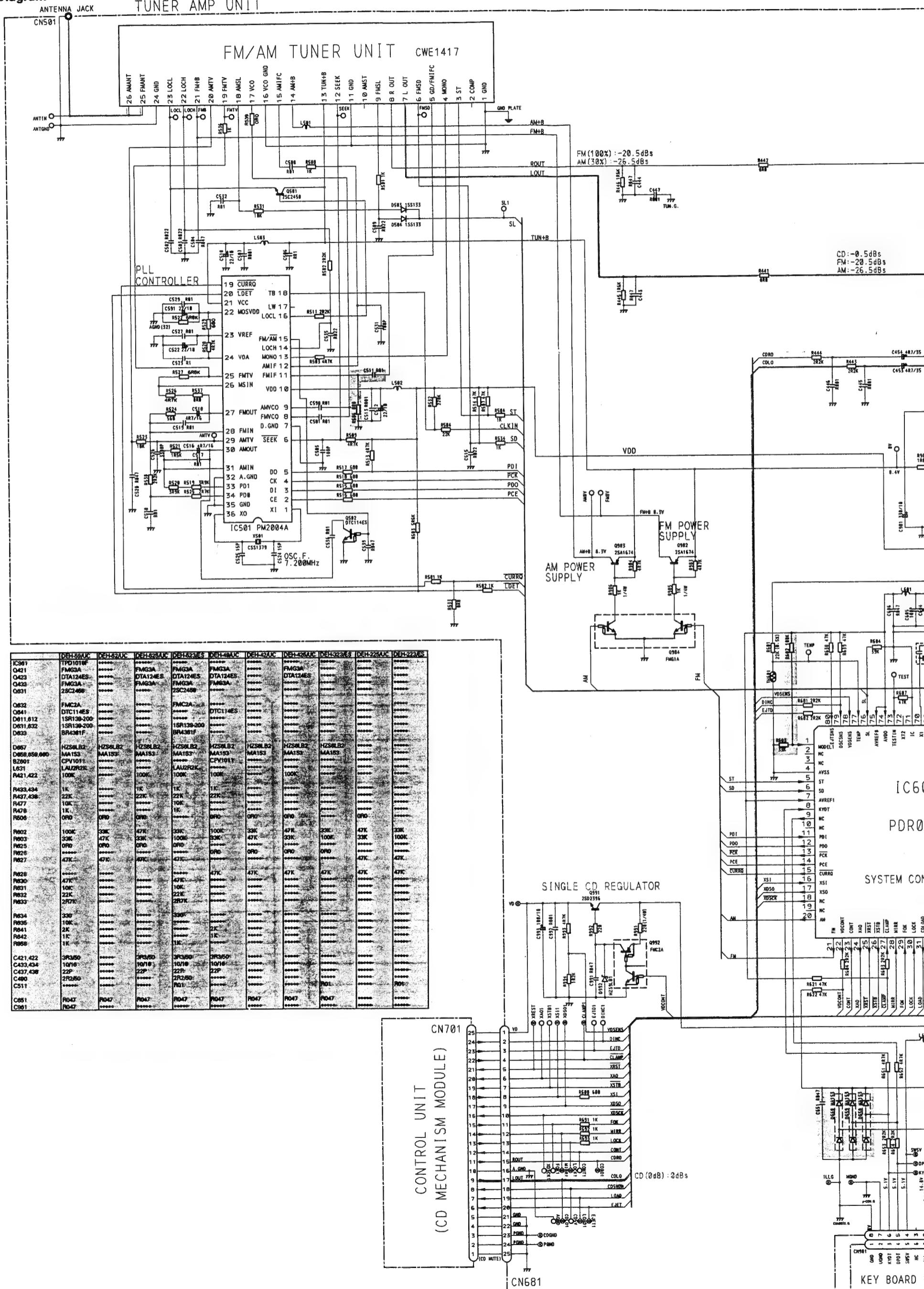
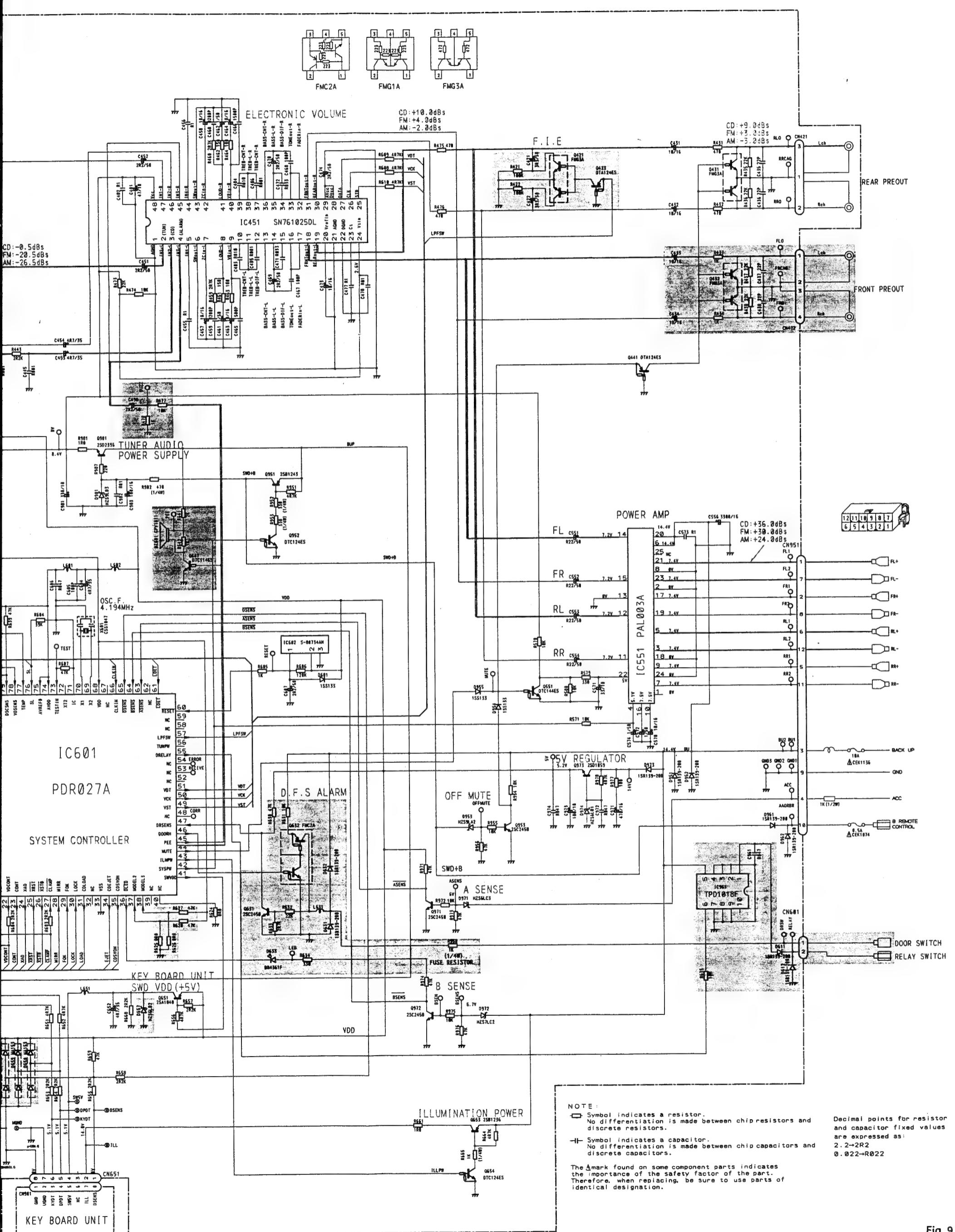


Fig. 8

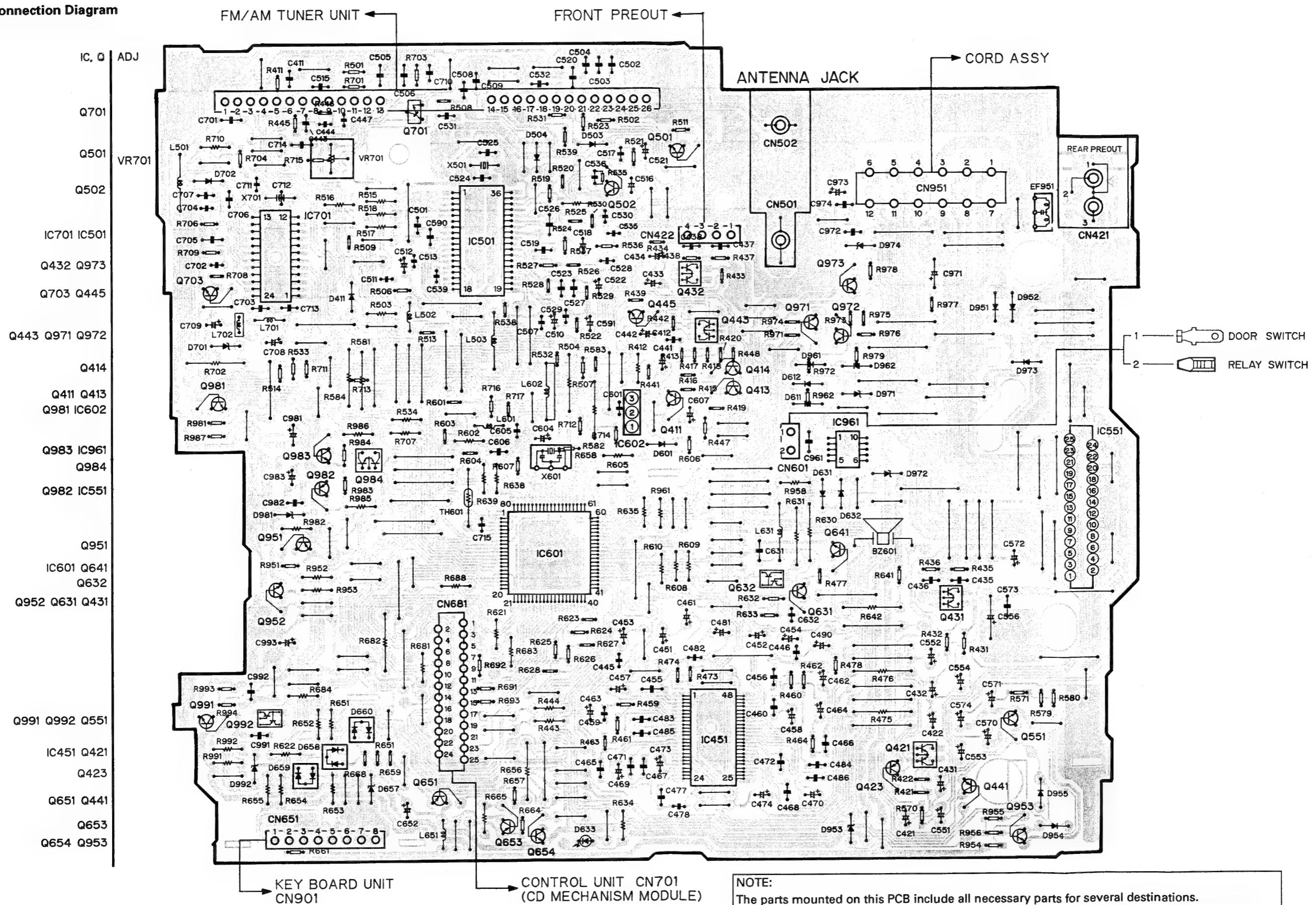
11.2 TUNER AMP UNIT

● Circuit Diagram



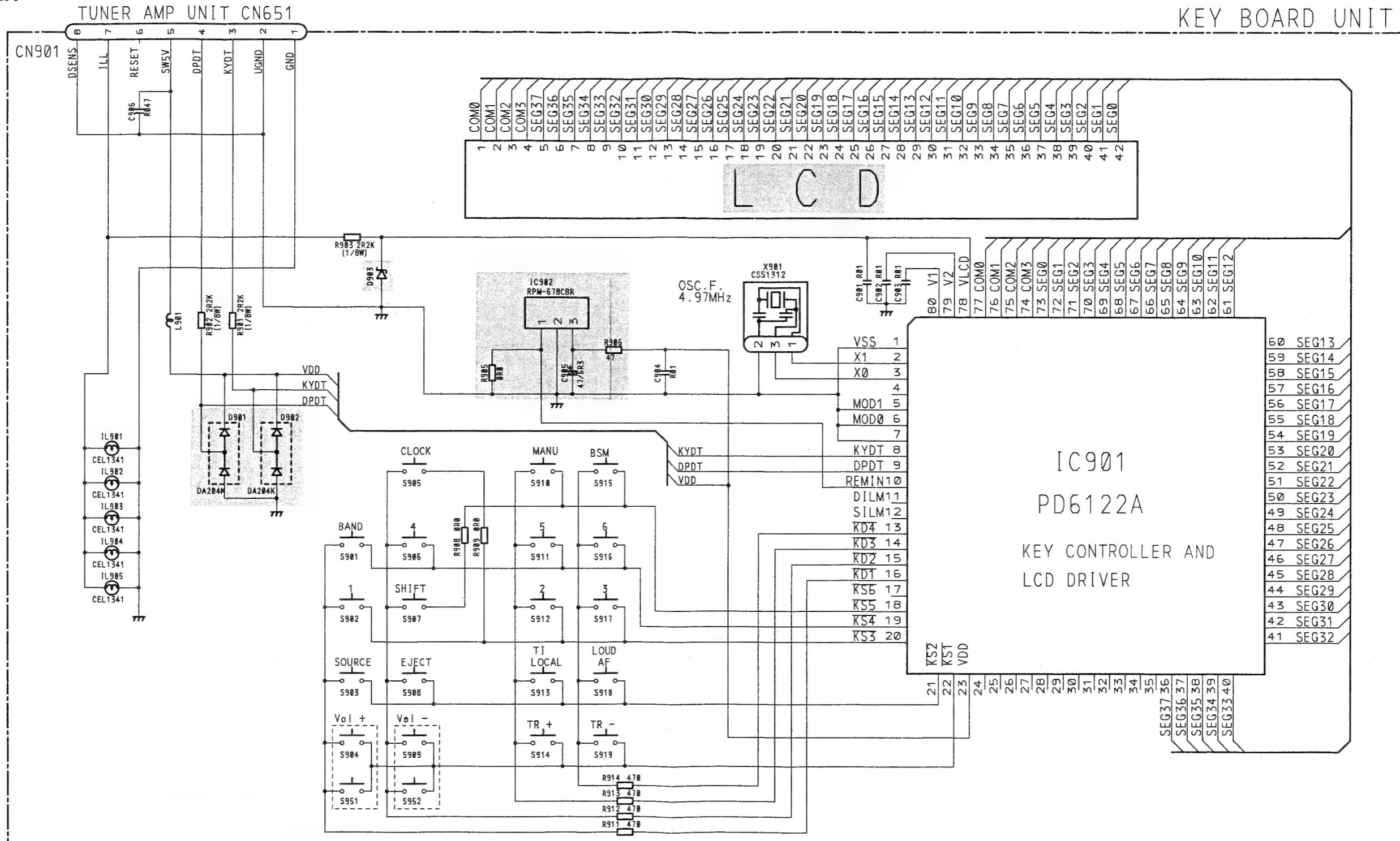


● Connection Diagram



11.3 KEY BOARD UNIT

● Circuit Diagram



	DEH-523/ES DEH-525/UC DEH-52/UC DEH-59/UC	DEH-323/ES DEH-425/UC DEH-42/UC DEH-49/UC	DEH-223/ES DEH-225/UC
IC902	RPM-678CBR		
D901, 902	DA204K	DA204K	
D903	MA3051L	MA3056L	MA3056L
LCD	CAW1329	CAW1330	CAW1330
R905	.....	0R0	0R0
R906	47		
C905	47/6R3		

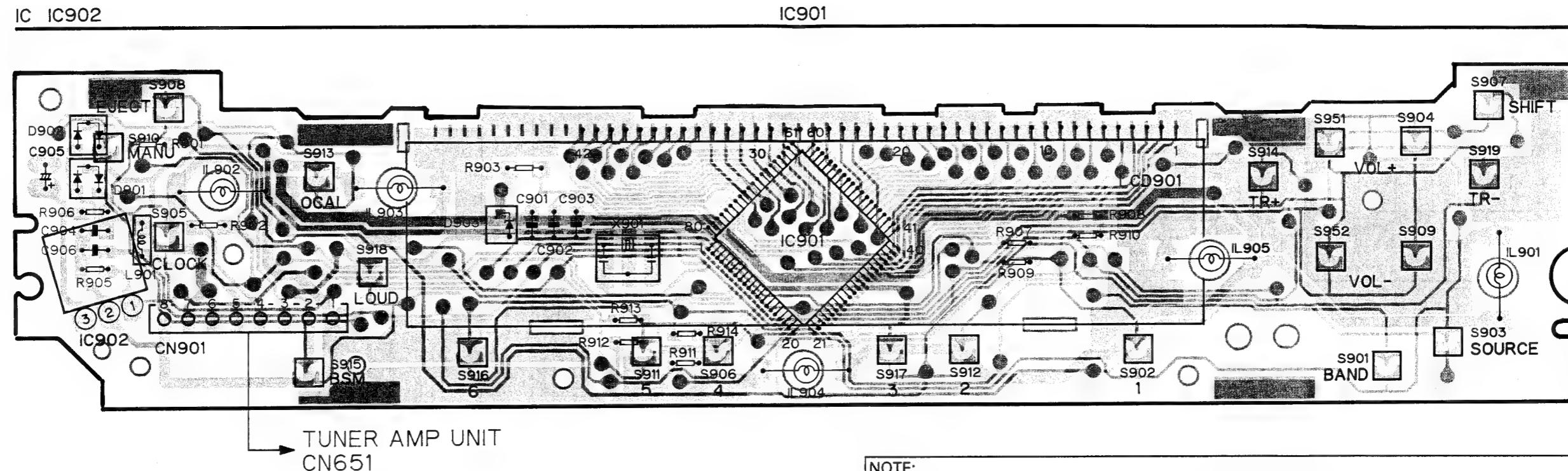
NOTE

NOTE :  Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

—II— Symbol indicates a capacitor.
No differentiation is made between chip capacitors and
discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as:
2.2→R2

● Connection Diagram



NOTE:

The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

Fig. 12

11.4 FM/AM TUNER UNIT

● Circuit Diagram

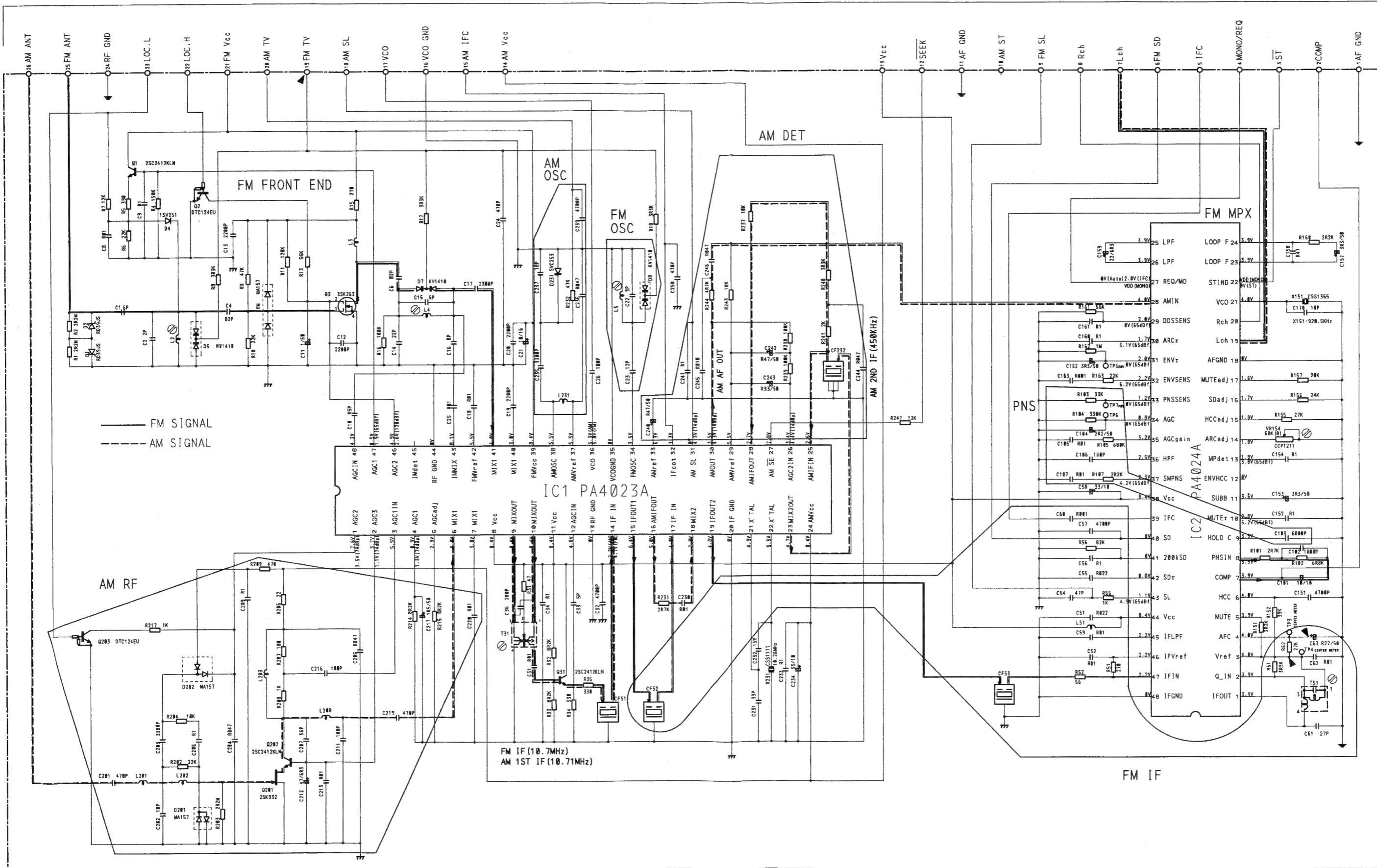
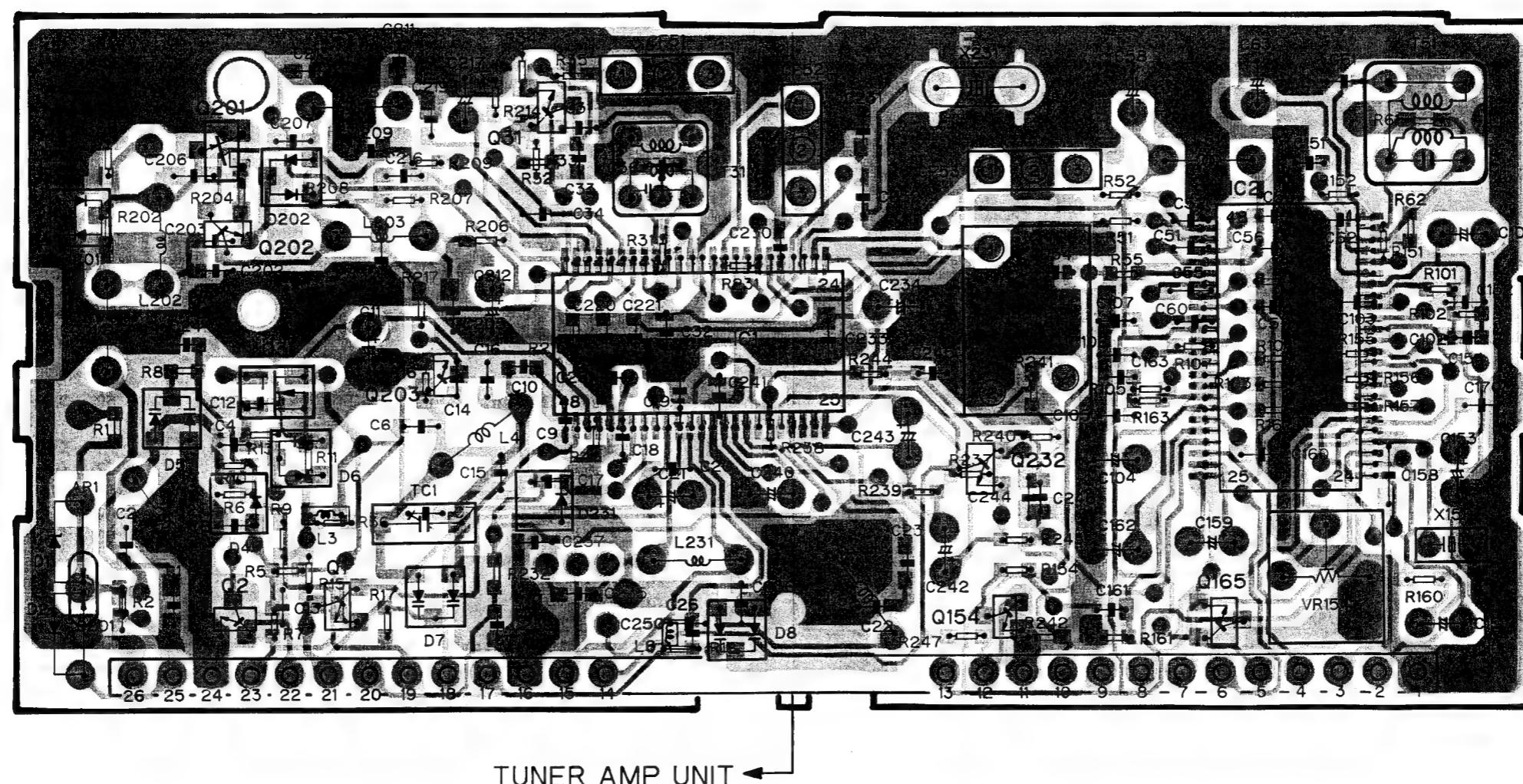


Fig. 13

● Connection Diagram

IC, Q	Q201 Q202	Q2	Q3 Q1	Q203	Q31	IC1	Q232 Q154	Q165	IC2	VR154	T51
ADJ	L2			TC1 L4		T31	L5				

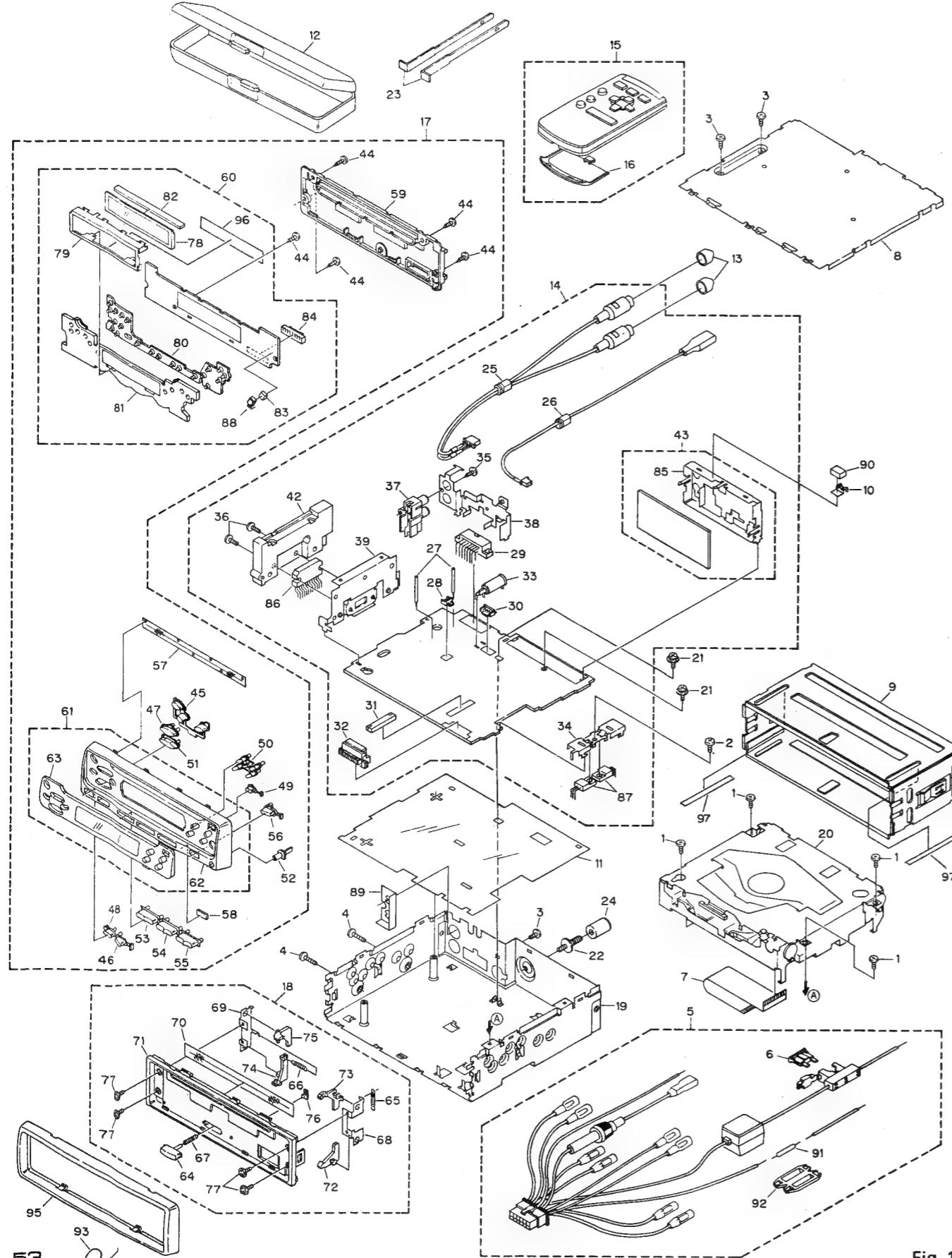


NOTE:
The parts mounted on this PCB include all necessary parts for several destinations.
For further information for respective destinations, be sure to check with the schematic diagram.

Fig. 14

12. EXPLODED VIEW AND PARTS LIST

12.1 CHASSIS(EXCEPT FOR DEH-225/UC AND DEH-223/ES)



NOTE:

● Parts marked by “*” are generally unavailable because they are not in our Master Spare Parts List.

● Parts List(DEH-59/UC)

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
1	Screw	BSZ26P050FMC		41	****		
2	Screw	BSZ26P080FMC		42	Heat Sink	CNR1407	
3	Screw	BSZ30P050FMC		43	FM/AM Tuner Unit	CWE1417	
4	Screw	BSZ30P160FMC		44	Screw	BPZ20P100FZK	
5	Cord	CDE4867		45	Button (S,SEEK)	CAC4469	
6	Fuse	CEK1136		46	Button (BAND)	CAC4470	
7	Cable	CDE4869		47	Button (+)	CAC4471	
8	Case	CNB1989		48	Button (SOURCE)	CAC4472	
9	Holder	CNC4946		49	Button (EJECT)	CAC4473	
10	Holder	CNC6469		50	Button (-,-)	CAC4474	
11	Insulator	CNM4522		51	Button (-)	CAC4542	
12	Case	CNS3860		52	Button (DETACH)	CAC4547	
13	Cap	CNV2680		53	Button (1 2)	CAC4578	
14	Tuner Amp Unit	CWM4485		54	Button (3 4)	CAC4579	
15	Remote Control Assy	CXA7390		55	Button (5 6)	CAC4580	
16	Battery Cover	CNS3383		56	Button (BSM)	CAC4581	
17	Detach Grille Assy	CXA8250		57	Cover	CNM4704	
18	Panel Assy	CXA8585		58	Spacer	CNM4776	
19	Chassis Unit	CXA8229		59	Cover	CNS3694	
20	CD Mechanism Module	CXK5001		60	Key Board Unit	CWM4501	
21	Screw	PSB30P060FMC		61	Grille Unit	CXA9112	
22	Screw	CBA1284		62	Grille	CNS4043	
23	Handle	CNC4947		63	Plate	CNS3732	
24	Bush	CNV1009		64	Button	CAC3776	
25	Cord	CDE4770		65	Spring	CBH1834	
26	****			66	Spring	CBH1835	
27	Clamper	CEF1005		67	Spring	CBH1858	
28	Plug(CN601)(2P)	CKM1129		68	Bracket	CNC6135	
29	Plug(CN951)(12P)	CKM1225		69	Bracket	CNC6136	
30	Plug(CN422)(4P)	CKS1238		70	Cover	CNM4875	
31	Connector(CN681)(25P)	CKS2228		71	Panel	CNS3695	
32	Connector(CN651)(8P)	CKS2884		72	Arm	CNV4358	
33	Antenna Jack(CN501)	CKX1006		73	Arm	CNV4359	
34	Holder	CNC6132		74	Arm	CNV4437	
35	Screw	BPZ26P080FMC		75	Arm	CNV4438	
36	Screw	BSZ26P120FMC		76	Lens	CNV4479	
37	Connector(CN421)	CKS3357		77	Screw	PMS20P030FZK	
38	Bracket	CNC6130		78	LCD	CAW1329	
39	Holder	CNC6131		79	Holder	CNC6430	
40	****			80	Rubber	CNV4354	

Fig. 15

DEH-59,52,525,49,42,425,225,523,323,223

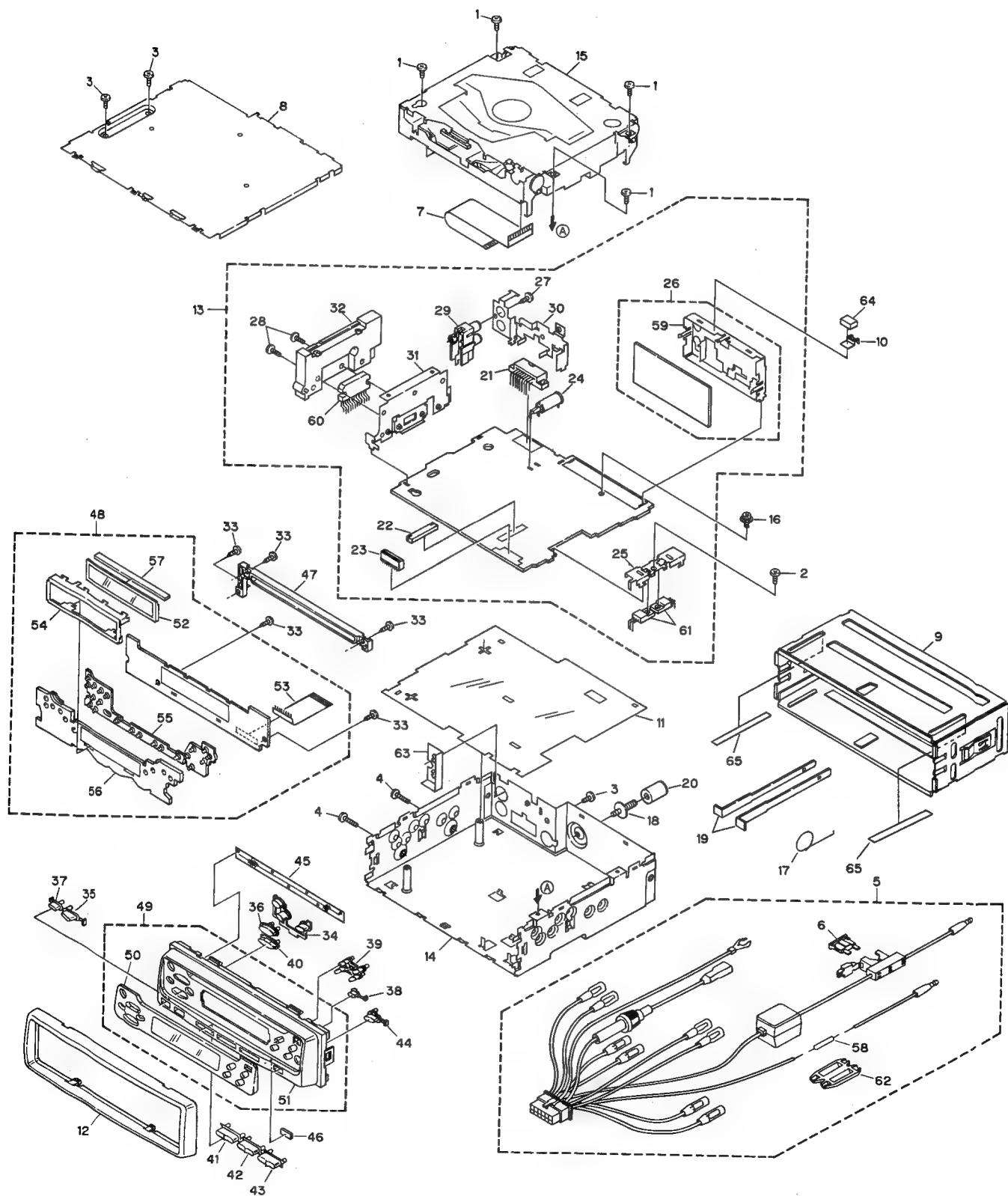
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
81		Lens	CNV4355	91		Resistor	RS1/2P102JL
82		Connector	CNV4449	92		Cap	CNS1472
83		Spacer	CNM4740	93		Spring	CBH-865
84		Connector(CN901)(8P)	CKS2883	94		Cord	CDE4772
85		Holder	CNC6555	95		Panel	CNS3581
86		IC(IC551)	PAL003A	96		Spacer	CNM4871
87		Transistor(Q981,991)	2SD2396	*	97	Spacer	CNM4888
88		IC(IC902)	RPM-678CBR				
89		Insulator	CNM4811				
90		Cushion	CNM4870				

● The DEH-52/UC, DEH-525/UC, DEH-523/ES, DEH-49/UC, DEH-42/UC, DEH-425/UC, and DEH-323/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-59/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-59/UC Parts List is given on page 53.

Mark	No.	Description	59/UC	52/UC	525/UC	523/ES	49/UC	42/UC	425/UC	323/ES
			Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
12		Case	CNS3860	CNS3860	CNS3860	CNS3860	.....	.....	CNS3860	CNS3860
13		Cap	CNV2680	CNV2680	CNV2680	CNV2680	.....	.....	.....	.....
14		Tuner Amp Unit	CWM4485	CWM4487	CWM4486	CWM4488	CWM4489	CWM4491	CWM4490	CWM4494
15		Remote Control Assy	CXA7390	CXA7390	CXA7390	CXA7390	.....	.....	.....	.....
16		Battery Cover	CNS3383	CNS3383	CNS3383	CNS3383	.....	.....	.....	.....
17		Detach Grille Assy	CXA8250	CXA8252	CXA8251	CXA8253	CXA8254	CXA8256	CXA8255	CXA8259
18		Panel Assy	CXA8585	CXA8586	CXA8586	CXA8585	CXA8586	CXA8586	CXA8586	CXA8586
19		Chassis Unit	CXA8229	CXA8231	CXA8230	CXA8229	CXA8230	CXA8231	CXA8231	CXA8231
25		Cord	CDE4770	.....	CDE4770	CDE4770	CDE4770	.....	.....	.....
26		Cord	.....	.....	.....	CDE4771	.....	.....	.....	.....
27		Clamper	CEF1005	.....	CEF1005	CEF1005	CEF1005	.....	.....	.....
28		Plug(CN601)	CKM1129	.....	.....	CKM1129	.....	.....	.....	.....
30		Plug(CN422)	CKS1238	.....	CKS1238	CKS1238	CKS1238	.....	.....	.....
60		Key Board Unit	CWM4501	CWM4501	CWM4501	CWM4501	CWM4502	CWM4502	CWM4502	CWM4502
61		Grille Unit	CXA9112	CXA8284	CXA8283	CXA9115	CXA8286	CXA8288	CXA8287	CXA8291
62		Grille	CNS4043	CNS3718	CNS3718	CNS4043	CNS3718	CNS3718	CNS3718	CNS3718
63		Plate	CNS3732	CNS3734	CNS3733	CNS3735	CNS3736	CNS3738	CNS3737	CNS3740
76		Lens	CNV4479	.....	.....	CNV4479	.....	.....	.....	.....
78		LCD	CAW1329	CAW1329	CAW1329	CAW1329	CAW1330	CAW1330	CAW1330	CAW1330
83		Spacer	CNM4740	CNM4740	CNM4740	CNM4740	.....	.....	.....	.....
88		IC(IC902)	PRM-678CBR	PRM-678CBR	PRM-678CBR	PRM-678CBR	.....	.....	.....	.....
94		Cord	CDE4772	.....	.....	.....	.....	.....	.....	.....

DEH-59, 52, 525, 49, 42, 425, 225, 523, 323, 223

12.2 CHASSIS(DEH-225/UC AND DEH-223/ES)



● Parts List

Mark	No.	Description	Part No.	Mark	No.	Description	Part No.
1	Screw	BSZ26P050FMC		35	Button(BAND)	CAC4470	
2	Screw	BSZ26P080FMC		36	Button(+)	CAC4471	
3	Screw	BSZ30P050FMC		37	Button(SOURCE)	CAC4472	
4	Screw	BSZ30P160FMC		38	Button(EJECT)	CAC4473	
5	Cord	CDE4867		39	Button(·,-)	CAC4474	
6	Fuse	CEK1136		40	Button(-)	CAC4542	
7	Cable	CDE4869		41	Button(1 2)	CAC4578	
8	Case	CNB1989		42	Button(3 4)	CAC4579	
9	Holder	CNC4946		43	Button(5 6)	CAC4580	
10	Holder	CNC6469		44	Button(BSM)	CAC4581	
11	Insulator	CNM4522		45	Cover	CNM4704	
12	Panel	CNS3861		46	Spacer	CNM4776	
13	Tuner Amp Unit(DEH-225)	CWM4495		47	Holder	CNV4356	
	Tuner Amp Unit(DEH-223)	CWM4497		48	Key Board Unit	CWM4505	
14	Chassis Unit	CXA8529		49	Grille Unit(DEH-225)	CXA8292	
15	CD Mechanism Module	CXK5001			Grille Unit(DEH-223)	CXA8294	
16	Screw	PSB30P060FMC		50	Plate(DEH-225)	CNS3741	
17	Spring	CBH-865			Plate(DEH-223)	CNS3743	
18	Screw	CBA1284		51	Grille	CNS3859	
19	Handle	CNC4947		52	LCD	CAW1330	
20	Bush	CNV1009		53	Cable	CDE4868	
21	Plug(CN951)(12P)	CKM1225		54	Holder	CNC6430	
22	Connector(CN681)(25P)	CKS2228		55	Rubber	CNV4354	
23	Connector(CN651)(8P)	CKS3380		56	Lens	CNV4355	
24	Antenna Jack(CN501)	CKX1006		57	Connector	CNV4449	
25	Holder	CNC6132		58	Resistor	RS1/2F102JL	
26	FM/AM Tuner Unit	CWE1417		59	Holder	CNC6429	
27	Screw	BPZ26P080FMC		60	IC(IC551)	PAL003A	
28	Screw	BSZ26P120FMC		61	Transistor(Q981,991)	2SD2396	
29	Connector(CN421)	CKS3357		62	Cap	CNS1472	
30	Bracket	CNC6130		63	Insulator	CNM4811	
31	Holder	CNC6131		64	Cushion	CNM4887	
32	Heat Sink	CNR1407		*	Spacer	CNM4888	
33	Screw	BPZ20P100FMC					
34	Button(S,SEEK)	CAC4469					

12.3 CD MECHANISM MODULE

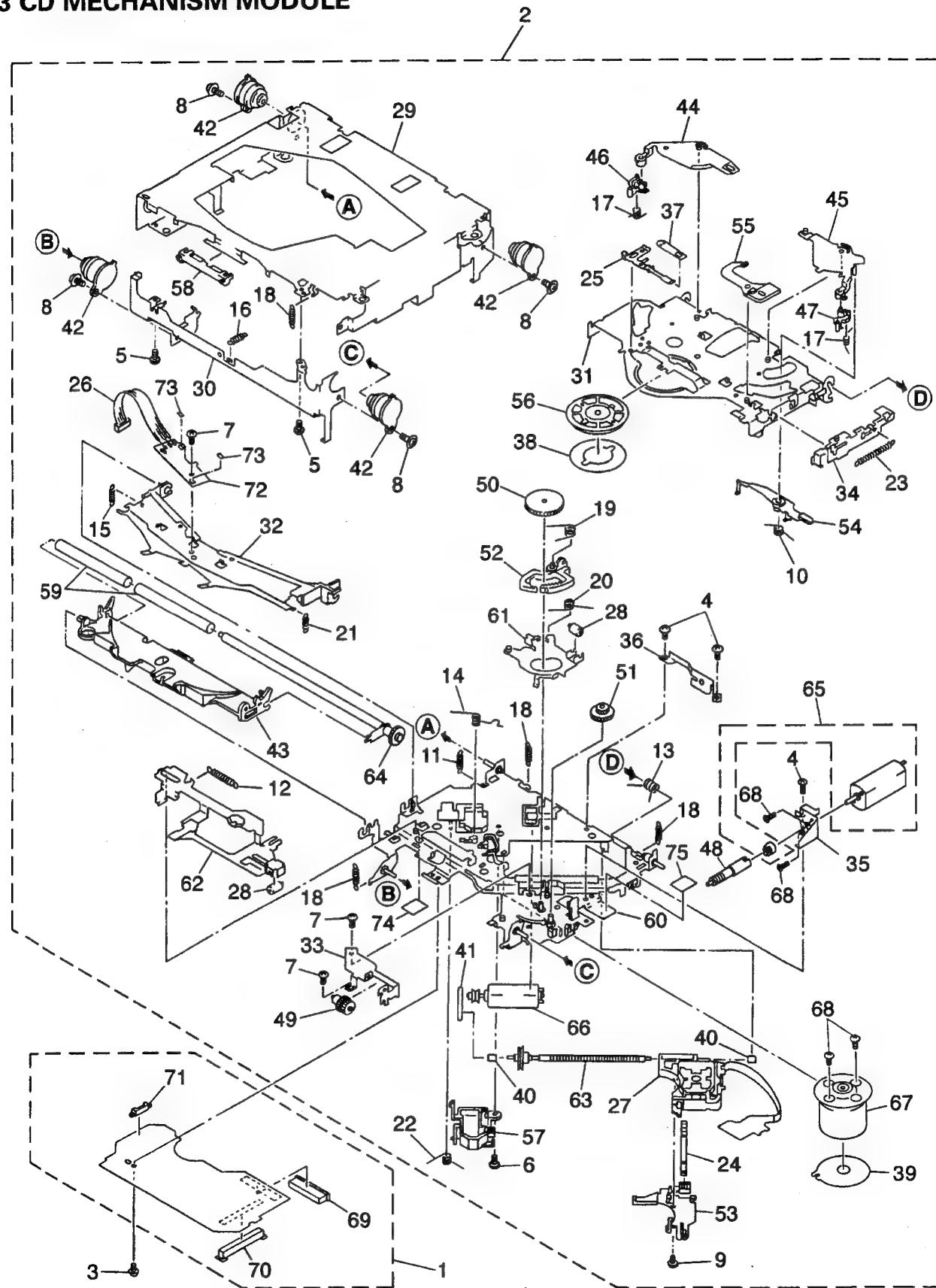


Fig. 17

● Parts List

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Control Unit	CWX1889	46	Arm	CNV4124
2	CD Mechanism Unit	CXA8870	47	Arm	CNV4125
3	Screw	PMS26P035FMC	48	Gear	CNV4128
4	Screw	BMZ20P030FMC	49	Gear	CNV4129
5	Screw	BSZ20P040FMC	50	Gear	CNV4130
6	Screw(M2×3)	CBA1077	51	Gear	CNV4131
7	Screw(M2×2)	CBA1250	52	Arm	CNV4136
8	Screw(M2×5)	CBA1296	53	Holder	CNV4663
9	Screw(M2×3.85)	CBA1362	54	Arm	CNV4138
10	Spring	CBH1916	55	Arm	CNV4139
11	Spring	CBH1724	56	Clamper	CNV4140
12	Spring	CBH1727	57	Holder	CNV4664
13	Spring	CBH1729	58	Guide	CNV4484
14	Spring	CBH1730	59	Roller	CNV4509
15	Spring	CBH1731	60	Chassis Unit	CXA8561
16	Spring	CBH1732	61	Arm Unit	CXA8565
17	Spring	CBH1736	62	Lever Unit	CXA8567
18	Spring	CBH1745	63	Screw Unit	CXA8699
19	Spring	CBH1832	64	Gear Unit	CXA8701
20	Spring	CBH1833	65	Load Motor Unit(M3)	CXA8702
21	Spring	CBH1848	66	CRG Motor Unit(M2)	CXA8986
22	Spring	CBH1849	67	Motor Unit(M1)	CXA9100
23	Spring	CBH1863	68	Screw	JFZ20P025FMC
24	Spring	CBL1214	69	Connector(CN101)	CKS1953
25	Spring	CBL1269	70	Connector(CN701)	CKS2774
26	Connector(CN1)	CDE4576	71	Connector(CN801)	CKS2196
27	PU Unit	CGY1070	* 72	Gathering P.C.Board	CNX2445
28	Roller	CLA2627	73	Photo-transistor(Q1, 2)	CPT-230S-X
29	Frame	CNC5796	74	Sheet	CNM4873
30	Frame	CNC5797	75	Cushion	CNM3917
* 31	Arm	CNC5799			
* 32	Arm	CNC5801			
33	Bracket	CNC5871			
34	Lever	CNC6054			
35	Bracket	CNC6056			
* 36	Bracket	CNC6376			
37	Spacer	CNM3315			
38	Sheet	CNM4849			
39	P.C.Board	CNP4230			
40	Bearing	CNR1415			
41	Belt	CNT1071			
42	Damper	CNV3974			
43	Arm	CNV4120			
44	Arm	CNV4122			
45	Arm	CNV4123			

13. PACKING METHOD

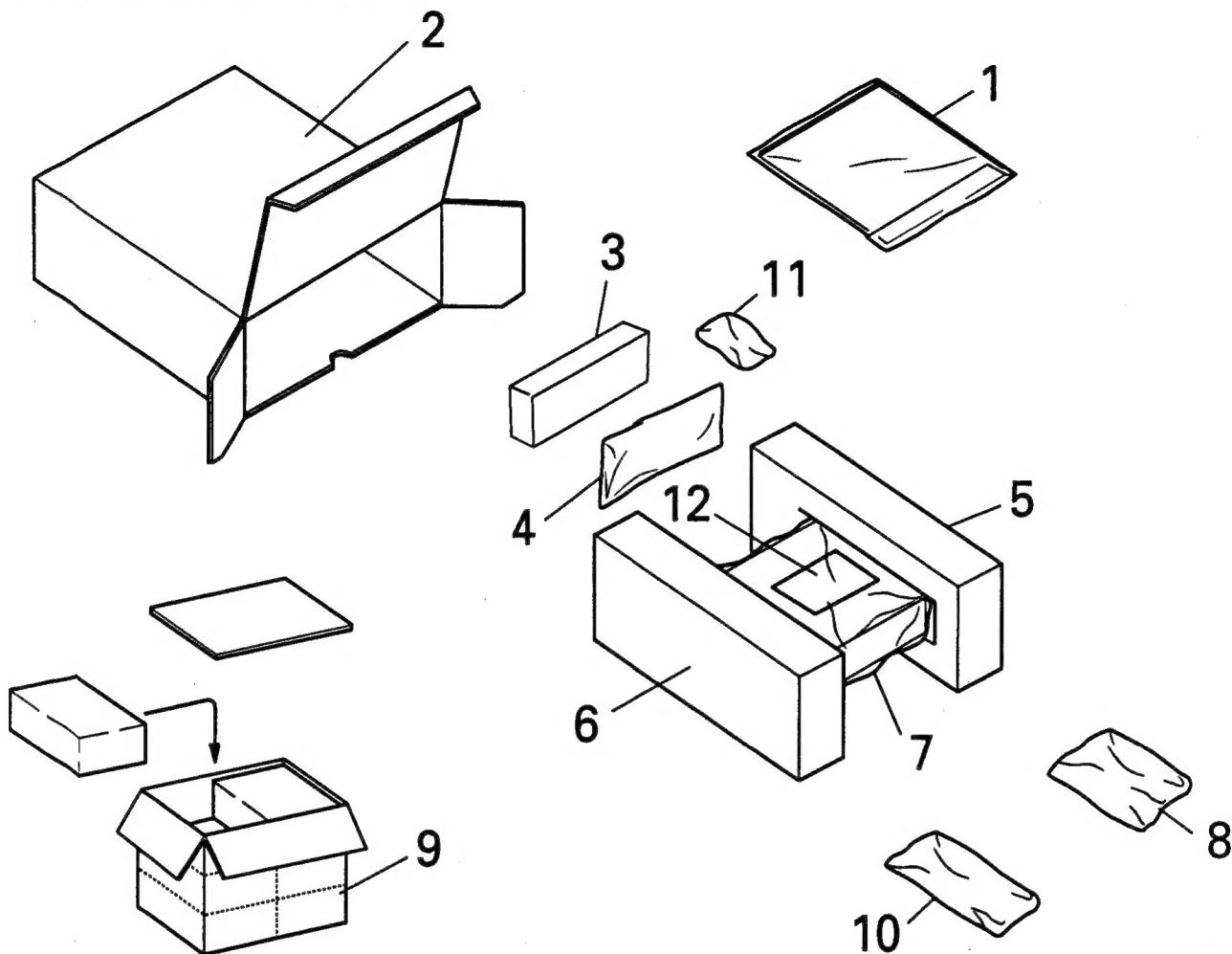


Fig.18

● Parts List(DEH-59/UC)

Mark	No.	Description	Part No.
1-1		Owner's Manual	CRD1946
1-2		Installation Manual	CRD1983
*	1-3	Label	CRW1343
*	1-4	Warranty Card	CRY1070
1-5	.....	
1-6		Polyethylene Bag	CEG1116
2		Carton	CHG2848
3		Case	CNS3860
4		Cord	CDE4867
5		Protector	CHP1769

● Non Spare Part

Mark	No.	Description	Part No.
6		Protector	CHP1768
7		Polyethylene Bag	CEG1173
8		Accessory Assy	CEA1918
9		Contain Box	CHL2848
10		Accessory Assy	CEA1473
11		Remote Control Assy	CXA7390
*	12	Caution Card	CRP1145

● Owner's Manual

Model	Part No.	Language
DEH-59/UC	CRD1946	English, French
DEH-52/UC, DEH525/UC	CRD1948	English, French, Spanish
DEH-523/ES	CRD1951	English, French, Spanish, Arabic
DEH-49/UC	CRD1947	English, French
DEH-42/UC, DEH-425/UC	CRD1949	English, French, Spanish
DEH-323/ES	CRD1952	English, French, Spanish, Arabic
DEH-225/UC	CRD1950	English, French, Spanish
DEH-223/ES	CRD1953	English, French, Spanish, Arabic

● Installation Manual

Model	Part No.	Language
DEH-59/UC	CRD1983	English, French
DEH-52/UC, DEH-42/UC, DEH-425/UC	CRD1987	English, French, Spanish
DEH-225/UC		
DEH-525/UC	CRD1984	English, French, Spanish
DEH-523/ES	CRD1985	English, French, Spanish, Arabic
DEH-49/UC	CRD1986	English, French
DEH-323/ES, DEH-223/ES	CRD1988	English, French, Spanish, Arabic

● Accessory Assy

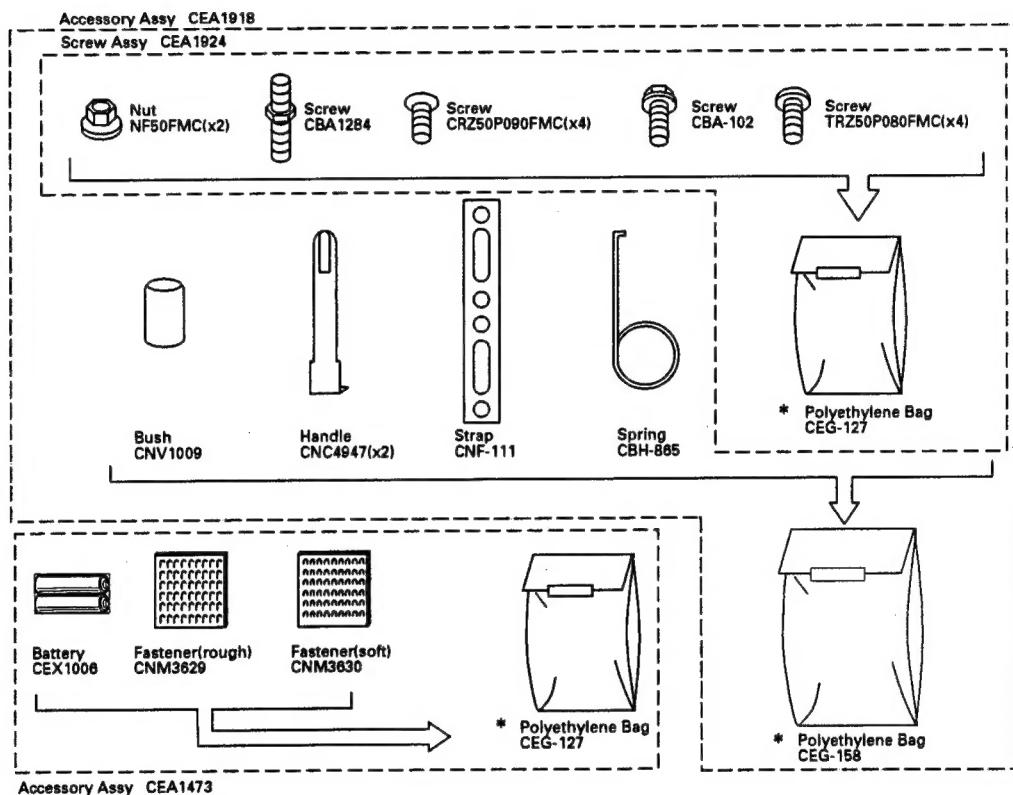


Fig. 19

- The DEH-52/UC, DEH-525/UC, DEH-523/ES, DEH-49/UC, DEH-42/UC, DEH-425/UC, DEH-323/ES, DEH-225/UC and DEH-223/ES Parts Lists enumerate the parts which differ from those enumerated in the DEH-59/UC Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The DEH-59/UC Parts List is given on page 60.

Mark No.	Description	DEH-59/UC	DEH-52/UC	DEH-525/UC	DEH-523/ES	DEH-49/UC	DEH-42/UC	DEH-425/UC
		Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
1-1	Owner's Manual	CRD1946	CRD1948	CRD1948	CRD1951	CRD1947	CRD1949	CRD1949
1-2	Installation Manual	CRD1983	CRD1987	CRD1984	CRD1985	CRD1986	CRD1987	CRD1987
*	1-3 Label	CRW1343	.....	.....	.....	.....	.....	.....
*	1-4 Warranty Card	CRY1070	.....	.....	.....	(CRY1070)	.....	.....
*	1-5 Card	.....	ARY1048	ARY1048	.....	.....	ARY1048	ARY1048
2	Carton	CHG2848	CHG2847	CHG2846	CHG2845	CHG2855	CHG2854	CHG2853
7	Polyethylene Bag	CEG1173	CEG1173	CEG1173	CEG-162	CEG1173	CEG1173	CEG1173
8	Accessory Assy	CEA1918	CEA1918	CEA1918	CEA2002	CEA1918	CEA1918	CEA1918
9	Contain Box	CHL2848	CHL2847	CHL2846	CHL2845	CHL2855	CHL2854	CHL2853
10	Accessory Assy	CEA1473	CEA1473	CEA1473	CEA1473	.....	.....	.....
11	Remote Control Assy	CXA7390	CXA7390	CXA7390	CXA7390	.....	.....	.....

DEH-59,52,525,49,42,425,225,523,323,223

Mark No.	Description	DEH-59/UC	DEH-323/ES	DEH-225/UC	DEH-223/ES
		Part No.	Part No.	Part No.	Part No.
1-1	Owner's Manual	CRD1946	CRD1952	CRD1950	CRD1953
1-2	Installation Manual	CRD1983	CRD1988	CRD1987	CRD1988
*	1-3 Label	CRW1343	.....	.....	.....
*	1-4 Warranty Card	CRY1070	.....	.....	.....
*	1-5 Card	.....	.....	ARY1048	.....
2	Carton	CHG2848	CHG2852	CHG2856	CHG2857
7	Polyethylene Bag	CEG1173	CEG-162	CEG1173	CEG-162
8	Accessory Assy	CEA1918	CEA2002	CEA1918	CEA2002
9	Contain Box	CHL2848	CHL2852	CHL2856	CHL2857
10	Accessory Assy	CEA1473	.....	.....	.....
11	Remote Control Assy	CXA7390	.....	.....	.....